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Original Articles

TREATMENT OF THE FEVER HEART *

H. B. Anderson, M.D., L.R.C.P. (Lond.), M.R.C.S. (Eng.).

The treatment of the Fever Heart is a problem, if one may use a paradox, at once so simple and so complex, that I have had difficulty in delimiting the ground to be covered in discussing it.

Fever as a clinical condition is symptomatic of the toxaemia associated with many different forms of local or generalized microbic infection. The effect of these upon the heart varies with the nature of the infection, its intensity, duration, individual resistance and many other associated conditions. It is well known that the infective bacteria of many diseases—as pneumonia, typhoid, influenza, gonorrhoea, septicaemia, etc., may invade the heart, though in other diseases—as diphtheria—the injury to the myocardium is due to the toxaemia alone.

The treatment of the fever heart is *simple*, because often it is satisfactorily included in the proper routine management of the case, without any medication directed specially toward the heart. Thus rest, mental as well as physical, fresh air, proper regulation of the quality and quantity of food and drink, baths, relief of pain, efficient elimination; specific medication, such as antitoxin in diphtheria or quinine in malaria, the drainage of septic cavities or the removal of foci of infection—all measures directed against the underlying infection—are important, directly or indirectly, in safeguarding the heart. Frequently nothing more is required.

It is important here to bear in mind the modern conception of fever as a conservative reaction designed to increase the resistance of the individual to the infection. Ordinarily it is only when fever assumes the type of a hyper-pyrexia that in itself it becomes the

*Read before Peterborough Meeting of the Ontario Medical Association, May 27th, 1915.

object of treatment. Then the use of baths, the application of the ice-bag to the precordium and like measures are our safest and most efficient remedies.

It is unnecessary at this time to caution against the use of the various coal tar preparations, as acetanilid, antipyrin, phenacetin and other depressant febrifuges, which formerly were so commonly used, with disastrous effects upon the heart and circulation.

The too common use by the laity of antikamnia, bromo-quinine and various headache powders containing coal-tar products, to relieve the pains of influenza (or other developing fevers) is responsible, I am sure, for some of the cases of cardiac failure and sudden death accruing in this disease.

The treatment of the heart in fever is *complex*, because, etiologically considered, it involves a knowledge of the specific action of the various infections upon the heart and circulation. In diphtheria, typhoid fever and other fevers the most competent authorities as yet are unable to apportion at all definitely the relative importance to attach to the heart and vasomotor mechanism for the resulting circulatory embarrassment. In other words, we lack the exact knowledge of the pathology of the condition which would enable us to direct our therapeutic aims against a definite objective point. We have, therefore, to rely to a large extent upon clinical experiences, and resort to symptomatic treatment for the circulatory trouble, whether due to the effects of the toxines upon the heart itself, the vasomotor centres or the vessels. In fact, recent investigations tend to show that, in the circulatory failure of the acute infections, vasoparesis, from poisoning of the nerve centres, is perhaps of greater moment than the primary cardiac depression. The two conditions, however, usually occur together and " the functions of the heart and vessels reciprocally affect each other to a marked degree."

It is manifestly impossible to discuss in detail the changes in the heart, with their variations in character and degree, in different infections. These may include cloudy swelling, fatty and hyaline degeneration of the muscle cells, congestion of the vessels, hemorrhages into the connective tissue, leucocytic infiltration, connective tissue proliferation, inflammation of the endocardium and pericardium with extension of the inflammatory process along the supporting connective tissue between the muscle fibres. These changes are important chiefly to the degree in which they weaken the efficiency of the heart muscle to maintain the circulation. It is very important for us to bear in mind that, owing to the tremendous degree of reserve power possessed

by the cardiac muscle, extensive pathological changes may be present without symptoms or signs of circulatory embarrassment to indicate them, at least before evidences of muscle insufficiency manifest themselves.

The mental attitude of the physician towards the dangers in the fever heart should be similar to that in regard to hemorrhage or perforation in typhoid fever—a clinical alertness based on a knowledge of pathology, which recognizes serious possibilities and takes measures to guard against them, even in the absence of all symptoms.

For this reason I believe that a knowledge of the pathological changes liable to occur in the heart in different infections is often a safer guide than signs or symptoms, especially for prophylactic treatment and the management following convalescence.

If we stop to consider the possible extent and degree of these changes, and especially the time that will be required for regeneration and repair in so highly organized a tissue as heart muscle, it will impress us with the necessity for sparing the organ as much as possible for a long period after the disappearance of the fever and other active evidence of the infection.

A careful observation of the heart, however, will enable us to detect important danger signals, such as feebleness of impulse, weakening of the muscle quality of the first sound, the dropping of beats, the pulsus alternans, development of soft systolic murmurs in the mitral and tricuspid areas or, at times, signs of even more serious import, as displacement of the apical impulse or the inception of auricular fibrillation.

The treatment of the fever heart naturally falls under two headings:

(1) *During the course of the fever*, when it cannot be separated clinically from the associated central vasomotor and peripheral vascular involvement.

(2) *During and following convalescence* when myocardial phenomena are of most importance.

As I have already stated, during the acute stages of the fever the treatment of the heart is often included in the proper routine management of the disease, and does not call for special medication.

Rest and comfort of the patient are of great importance. And here may I emphasize the influence of the cheerfulness, hope, encouragement and confidence inspired by the judicious physician and nurse, in inducing and maintaining the mental quiet which

every experienced clinician recognizes to be so important a factor in the management of cardiac cases.

The depressing effect on the heart and circulation of pain, restlessness and insomnia, are at times not sufficiently appreciated. In these conditions the administration of morphia, bromides or other sedatives to induce rest and sleep may be of the utmost value indirectly in relieving the heart.

Similarly the relief of digestive disturbance, and especially distention of the abdomen, should be borne in mind. A mercurial, followed by a saline, by depleting the portal circulation, may indirectly relieve the right side of the heart.

In vigorous patients, with evidence of overloading of the right side of the heart, especially early in pneumonia, venesection is a therapeutic measure which has perhaps fallen too much into disuse.

The ingestion of excessive quantities of fluid, necessitating increased work on the part of the heart to force it through the circulation, is a matter which is too often lost sight of in our endeavors to flush out the system.

The use of baths and the ice-bag to the precordium to quiet the circulation, reduce the fever, slow the pulse and improve the vascular tone, are all valuable means of assisting the heart.

In circulatory failure due to vasoparesis, with over-filling of the splanchnic area and depleting of the general circulation, the subcutaneous or intravenous administration of normal saline solution is of value, though to a less degree than is that resulting from hemorrhage.

The inhalation of oxygen I have found of value in maintaining cardiac action in some cases of failing circulation, especially where cyanosis is present.

It is impossible, from the nature of the function, to give the heart physiological rest, but whatever measures tend to lessen the frequency of the pulse without impairing the circulation are in the right direction.

The heart and vasomotor centres may be favorably influenced reflexly by sensory stimuli from the surface of the body, so that baths, friction, mustard plasters to the precordium and such measures have a rational justification for their use as circulatory stimulants.

Every clinician will recognize how often the history of a case of myocardial insufficiency may be traced back to an attack of fever—pneumonia, typhoid, influenza, rheumatism, septicaemia, etc., occurring a longer or shorter period before, even though no definite evidences of heart complication showed themselves at the time. Da Costa, many years ago, called attention to this in his

contributions on "Heart Strain in Soldiers." One cannot emphasize too strongly the necessity for avoiding any unusual or severe exertion until there has been time for myocardial regeneration after fevers. Failure to observe this precaution is a common cause of angina, or other form of irreparable damage to the heart.

The importance of chronic foci of infection in the tonsils, about the teeth, ears, accessory nasal sinuses, etc., as the sources whence pathogenic bacteria may enter the circulation and attack valves or endocardium—especially if previously diseased—should never be lost sight of. Recent investigations of the etiology of subacute and chronic bacterial endocarditis strongly emphasize this point.

Drugs in general have a more limited field of usefulness in the fever heart than in chronic cardiac diseases. Mackenzie says: "That apart from the probably specific action of salicylate in rheumatic cases the employment of cardiac or other drugs is of little avail. The heart is already in possession of a poison far more powerful than the drugs at our command, and these in medicinal doses are without effect. The man who puts his faith in drugs exclusively neglects too often the most useful methods."

I believe that the value of the salicylates in protecting the heart in rheumatism is very questionable, and may be a source of danger, if by relieving the pains which necessitate the patient's keeping at rest he is allowed up sooner than would otherwise be possible.

I do not propose to enter into a discussion of the difference of opinion among pharmacologists as to the action upon the heart, medullary centres and vessels of the various drugs recommended for their beneficial influence, nor of the fallacies involved in applying the knowledge of their action on the healthy organs of experimental animals to the diseased organs of man. The question of their value, after all, is a practical one, to be ultimately determined by critical investigation and accurate clinical observations in hospital wards and private practice. In this direction much work yet remains to be done.

I have never seen any benefit from drugs of the digitalis group in the cardiac weakness of fevers. They do not, ordinarily, slow the pulse, they may interfere with digestion, or induce vomiting, and in cases of intermittency of the pulse from involvement of the auricule-ventricular bundle, may induce heart block.

There is also a growing pessimism in regard to the value of strychnia, though it undoubtedly is a stimulant to the medullary centres and possibly exerts a favorable influence on the tone of the heart muscle.

Camphor, acting principally upon the nerve centres, has been a more recent favorite. I have used it extensively and have thought it of some use, though its effect is not striking.

Caffeine is a stimulant to the medullary and cerebral centres, and so increases the feeling of well-being, but in large and repeated doses may tend to induce sleeplessness.

I have never seen any benefit from the hypodermic administration of ether, which formerly was so extensively used in circulatory failure.

Adrenalin, intravenously or subcutaneously, may be used in cases with low blood pressures, though its influence is transient.

Despite the results of pharmacological investigations and the opinions of many excellent authorities, I believe alcohol is of real value in some cases of circulatory failure, though by no means the essential to treatment is was once considered.

To summarize I would say:

(1) That chief reliance should be placed upon general treatment—mental and physical rest, the relief of pain, insomnia, digestive disturbance, baths, diet, the ice-bag to the precordium, etc.

(2) Cardiac drugs occupy a secondary role in treatment.

(3) Coal-tar and other depressant antipyretics are dangerous and should be used, if at all, with great caution.

(4) A careful study should be made of the pathological changes liable to occur in the heart in the various fevers, as a guide to the care and time required for regeneration and repair of the damaged heart muscle.

(5) It is necessary to avoid over-exertion or strain during convalescence—for months or even a year after infection.

(6) It is important to guard against subsequent infections, such as tonsillitis, influenza, etc., in patients whose hearts have previously been damaged. Even short febrile attacks should be considered seriously and carefully treated.

OBSERVATIONS FROM 24 CASES OF EXOPHTHALMIC GOITRE—A NEW SYMPTOM*

D. Smith, M.D., Stratford, Ont.

I desire to speak to the general practitioner, answering some of the questions that arise during the course of the disease, which are not referred to in the text-books, and to point out an important symptom that was found to be almost constant in this disease. I was led to give my experience with this symptom after reading a paper by Dr. Llewllyn Barker on the symptomatology of exophthalmic goitre, in which he makes no reference to it, nor has reference been found to it in the text-books.

I speak from an experience of twenty-four cases—twenty-one of which have occurred in my own practice—three in consultation with other doctors.

Sex—Male	3
Female	21

Enlargement of thyroid gland previous to development of symptoms of exophthalmic goitre was noted in thirteen cases out of twenty-one. One outstanding case was an unusually large goitre, quite as large as a foetal head in a woman sixty-three years of age, which had existed for thirty-five years. She had a very severe attack, developed insanity which lasted four months, finally recovered and died eight years later from influenza, with cardiac involvement and tracheal pressure.

Age—Old, 87. Youngest, 18.

In Case at Eighty-seven.

The pulse for a period of three months never fell below 160; the enlargement was entirely in the middle lobe, which became pulsating. She finally died of symptoms resembling cerebral hemorrhage.

Recurrence of Disease.

There was recurrence of the disease in four cases of the 21, two of which proved fatal. The other two have developed what might be called chronic exophthalmic goitre. The symptoms will light up in them with slight provocation, such as slight illness or nervous shock.

*Read at Annual Meeting, Ontario Medical Association, Peterborough, May, 1915.

Recurrence of the disease seems to be quite serious—somewhat akin to the behaviour of pernicious anæmia.

Two cases developed marked symptoms of exophthalmic goitre, during treatment of simple enlargement of the gland with iodine preparations, so there is a real danger there.

Insanity.

Two cases developed insanity—one being treated in the hospital suddenly developed insanity in the night and quietly walked out of the hospital and home. This was a case of recurrence. She died in the course of three weeks. The other case recovered as reported above after four months of insanity. The characteristics of the insanity in both cases were, 1st, sudden development without warning; 2nd, they both wished to go away from where they were and required constant watching.

Surgical Work During Course of the Disease.

One case developed an acute infection of the gall bladder. I operated, drawing off nearly a quart of fetid pus. During the course of the operation and subsequent treatment the pulse was constantly above 160. The operation seemed to have no effect in the course of the exophthalmic goitre. The patient recovered and is still in good health.

Will the Eye Symptoms Recover?

This is a question very frequently asked by patients, and no answer was found to it in the text-books. But you can assure your patient that the eye symptoms will disappear, but in severe cases it may take four to five years.

Pulse Rate and Prognosis.

The prognosis seems to be directly in keeping with the pulse rate. If pulse rate does not go above 160, prognosis is good, above that it is in directly inverse ratio to the pulse rate. Two cases in this series had a pulse rate of 180, followed by recovery—no case where the pulse rate reached 190 recovered.

Death.

There were three deaths in the series—two of these were cases of recurrence. Death seems to come from direct wearing out of the heart muscle. The heart gradually becomes faster. In one I

counted the heart-beats with the stethoscope at 280 per minute, another at 240, the third at 220 in a woman 65 years of age. One of these was a very acute case. She was approached by a young man in the dark and greatly frightened, following this she developed the symptoms and inside of seven weeks from the fright she died of exophthalmic goitre, her pulse reaching 240.

A New Symptom.

The symptom to which reference is made in the title of this paper was noted in the sixth case treated, and has been found constant in all except one of the last 18 cases—the one case where it was absent was in the case referred to where the enlargement and activity were entirely in the middle lobe. No reference to this symptom has been found in the literature, hence the decision to put it before you.

The symptom is a to and fro blowing Bruit synchronous with the heart-beat, heard with the stethoscope at first over the region of the superior thyroid artery, and as the disease develops over the whole lobe, or the whole gland, if both lobes are affected. Both the "to" and "fro" part of the Bruit are about equal—in this way differing from a murmur produced by pressure of the stethoscope over an artery which produces a single murmur.

The Bruit appears very early in the disease—before exophthalmos or tremor, and generally before any noticeable enlargement of the gland. In one case it was heard when the pulse rate was only 85, and at this stage in development the disease yields well to treatment.

As the disease develops the Bruit spreads over the whole lobe or gland, and may be heard as a loud blowing Bruit over any part of an enlarged gland, and as the disease begins to abate, the Bruit recedes both in loudness and extent of area until it is again heard only over the superior thyroid artery.

One case applying for treatment showed in a marked way the importance of this symptom. It was a case of recurrence. One lobe was decidedly larger than the other and I expected to find it the active lobe, but to my surprise I found only the smaller lobe to be affected. In this case a surgeon removing one lobe, as is sometimes done, would have removed the wrong lobe and given rise to disappointment in results.

Next to increased pulse rate this is the most important symptom of the disease, as it enables positive diagnosis much earlier than waiting for the four classical symptoms with which you are all familiar.

THERAPEUTIC NOTES

THE USE OF KAOLIN TO REMOVE BACTERIA FROM THE THROAT AND NOSE*

L. Hektoen, M.D., and B. Rappaport, M.D., Chicago.

Kaolin is used in immunologic and other investigations on account of its great absorptive powers. The idea occurred to us that, on account of this absorptive power, kaolin might be of use in removing bacteria from the nose and throat, especially in diphtheria carriers. Accordingly, with the co-operation of Dr. George H. Weaver, tests have been made in suitable cases in the Durand Hospital of the Memorial Institute for Infectious Diseases.

We have found that, when properly applied, kaolin in the form of a dry powder removes not only diphtheria bacilli, but also practically all bacteria from the nose in the course of from three to four days. For this purpose the kaolin is blown into the nose six or seven times a day at two-hour intervals by means of a rubber bulb attached to a glass tube, the free end of which tapers a little. The insufflation is repeated several times at each treatment. The success of this treatment appears to depend largely on the free and thorough distribution of kaolin over the nasal surfaces. In cases of more or less obstruction of the nasal passages, the removal of bacteria by kaolin insufflation is more difficult.

In order to secure the most thorough application of kaolin to the mucous membrane of the throat, patients, if old enough, are instructed to swallow as slowly as possible one-third teaspoonful of kaolin four or five times an hour during the day. In the case of adults and older children who are anxious to get rid of diphtheria bacilli, this method, which has been selected after trial of several others, involves no special difficulty. In the case of small children, it is more difficult to apply enough kaolin, and the plan of mixing the kaolin with sugar in the form of tablets is being considered. In a number of cases, in some of which there were a great many diphtheria bacilli in the throat, complete and apparently permanent removal has been accomplished by means of kaolin in the way described in from two to four days, the throat to a large extent being freed from all bacteria.

We have found also that the insufflation of kaolin into the nose in cases of rhinitis in scarlet fever appears to improve the condition rapidly and to remove streptococci and other bacteria quite promptly.

*J. A. M. A.

We have not found kaolin to be irritative; when taken into the mouth it gives rise to a feeling of grittiness.

It seems, then, that kaolin, and probably also other substances of a similar nature, may prove of value in removing bacteria from various surfaces of the body by virtue of mechanical absorption. This may prove of advantage, not only in carriers, but also in conditions of acute infection. Our experience indicates that by means of kaolin, diphtheria bacilli and other bacteria are removed quite easily, especially from the nose.

TREATMENT OF POST-INFLUENZAL COUGH BY BRITISH-MADE LYSOL

To the Editor of *The Lancet*.

SIR,—In company with thousands of others I had my yearly attack of influenza six weeks ago. I remained in bed two days, then went to work again as usual, but felt quite limp for the next three weeks; at the end of which time I began to pick up, but never lost a troublesome cough. It kept me awake at night, and in the morning I coughed until I had got rid of quantities of mucus of all consistencies. Where it all came from I am at a loss to understand; it collected in the upper part of the trachea and larynx. I had no chest symptoms.

I had on my table a bottle of British-made lysol sent as a sample. I was only interested in it because it was stated that used as an ointment, 10 per cent., it cured the worst cases of scabies, and I am getting it tried for mange and other skin troubles in dogs, so far with favorable results. Two days ago I was smelling at the bottle for some reason or other when it struck me that it might be good for my cough. I put about 4 oz. of boiling water into a small jug and poured on it about a drachm of the lysol and then inhaled the fumes about five minutes. They made my nose and throat tingle a little but had no other unpleasant effect. I coughed a bit afterwards, then my cough stopped and has given me very little trouble since. I slept quite comfortably that night and coughed about twice the next morning instead of thirty or forty times. I slept all the next night without waking and did not cough the next morning (May 16th).

On that day I tried myself pretty high. At 5 o'clock I paraded with about two hundred other special constables at Marlborough street police station; ninety-nine of us were marched to Oxford Circus station, from there we went by train to Bow, marched

from the railway station to the police station, were mustered with others in the station yard, and for the next four hours were in the streets in pouring rain and puddles galore under foot, or in the station in rooms reeking of wet clothing, with "draughts to the right of us, draughts to the left of us, draughts in front of us," and it may be added "draughts behind us." At eleven o'clock we were dismissed and returned to Marlborough street by the same route. I got to bed at 12.45 and slept soundly till seven. The following day I had no cough.

There may have been other causes in operation—for one thing the weather got much milder and the wind went out of the north-east, but I was inclined to believe that inhalation of lysol cured my cough, and I was convinced of it after trying it again. A night later I was coughing again, and I feel I must sound a note of caution here. I fancy it may have a stupefying effect. I used the remedy in an ordinary spirit boiler, and as soon as a good cloud of steam began to rise put my nose and mouth well into it, and as near the boiling fluid as possible, and breathed deeply. In about two minutes I got drowsy and was very near dipping the end of my nose into the hot liquid, which would no doubt have proved an excellent restorative. There may be a source of fallacy here, because it was my bed-time, and I had been in the streets for the greater part of the two preceding nights, and could have slept standing up against a wall. Another thing, I am not sure that lysol used in too strong solution or inhaled for too long a time may not be irritating to the respiratory mucous membrane, for on the last occasion I experienced something of the sensation which all of us who can remember when there were no other lucifer matches than the old-fashioned sulphur matches have felt if we tried to light a pipe or perform any such operation near the nose and mouth without waiting till the brimstone had burnt off.

I have given my experience for what it is worth, and hope it may be of use to others. I would suggest that the solution I used was too strong; it is somewhere between 1-60 and 1-30, very likely more, and I expect 1-100 is plenty strong enough. I did not measure the lysol; I have measured the whole mixture I used and it is four ounces.

I am, Sir, yours faithfully,

CHARLES HIGGENS, F.R.C.S., Eng.

Brook Street, W., May 29th, 1915.

P.S.—The inhalation might be tried in whooping-cough.—*The Lancet.*

Reviews

Amoebiasis and the Dysenteries. By Llewellyn Powell Phillips, M.A., M.D., B.C. (Cantab.), F.R.C.P. (Lond.), F.R.C.S. (Eng.). Professor of Medicine in the Egyptian Government School of Medicine, Cairo, etc., etc. Price, 6s. 6d. net. London: H. K. Lewis.

Anyone who had to gain a good knowledge of this subject had, heretofore, to consult much scattered literature. The author has, therefore, rendered distinct service to scientific medicine in publishing a book of this character. In certain sections it is a subject of growing importance. The scientific reader will here find as complete description as it is possible to give of the whole subject of amoebic infection. A complete bibliography is incorporated.

Materia Medica and Pharmacy. For Medical Students, with an Appendix on Incompatibility. By Reginald R. Bennett, B.Sc. (Lond.), F.I.C., Pharmaceutical Chemist. Third edition. London: H. K. Lewis.

In this well-arranged book the medical student will find a concise account of drugs, chemicals and compound preparations of the B.P. They are arranged according to their physiological action, such as Delirifacients, Catharties, Ecbolics, Antacids. There are Dose Tables, chapters on Chemical and Physical Incompatibility, and Latin Words and Phrases used as directions in prescriptions.

Catechism Series. Botany. Part II. Second edition. Revised and enlarged. Price, one shilling net. Edinburgh: E. & S. Livingstone.

Arranged in the form of question and answer, and aptly and richly illustrated, this forms a practical arrangement for the primary medical student. Volume II. treats of Histology; Cells and Tissues; Roots; Stems; Leaf; Physiology of Plants; Fern; Moss; Pirus; Schemes of Life Histories; General Character of Plants; Bacteria and Fungi; Algae; Practical Work. It is elementary but satisfying for the requirements of the medical student.

Radium. Its Physics and Therapeutics. By Dawson Turner, B.A., M.D., F.R.C.P., Edin., M.R.C.P., Lond., F.R.S., Edinburgh. Lecturer on Medical Physics, Surgeons' Hall, Edinburgh, etc., etc. Second edition. Revised and enlarged. Toronto: The Macmillan Company of Canada.

This revised and enlarged volume on an ever-increasing and enticing therapeutic agent, will be welcomed by those members of the profession interested in the subject of radium therapy. There are history, physics, methods of application, dosage, production and uses of emanations, as well as the citation of practical cases, which latter forms a good one-half of the book. The book may be taken as an authoritative exposition which will meet the requirements of practitioners.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume IV, Number II (April, 1915). Octavo of 197 pages, 47 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published bi-monthly. Price per year: Paper, $8.00; cloth, $12.00. Sole Canadian Agents: The J. F. Hartz Co., Ltd., Toronto, Ont.

In these clinics practitioners will find much of practical interest. Coming from a man of Dr. Murphy's undoubted standing in American surgery, they may be taken as expressing almost the final, or at least the modern, word upon each subject.

Arranged often in a dialogistic way, points are brought out which, in an ordinary paper or clinical address, might be overlooked. The arrangement lends interest to each subject dealt with as one can almost be participating in a clinic.

Loss of Hair. Baldness, Falling Hair, Prematurely Gray Hair and Seborrhœa Successfully Treated by the new Quartz Light Rays. Authorized translation from the German of Dr. Franz Nagelschmidt. By Richard W. Muller, M.D., New York. New York: William R. Jenkins Company.

Whilst Kromayer's quartz lamp has been used for some time in American, English and Continental hospitals for treating irritating and itching skin affections, it possibly did not accomplish much over the Finsen light X-ray and other methods of treatment. With Nagelschmidt's modification of this lamp, however, such splendid results have been achieved that this method of treatment

will attract wider and more universal attention. The results are seen in the following: Of 132 cases of alopecia areata treated, eighty per cent. were cured, sixteen improved, eight remained unimproved. In twenty-two cases of total baldness, all were cured except six cases, which failed to return for treatment. All the fifty-three cases of alopecia seborrhoea or prematura were cured without exception. The lamp may prove to have a very useful field in the prevention of baldness.

Occupational Affections of the Skin. A brief account of the trade processes and agents which give rise to them. By R. Prosser White. M.D., Ed., M.R.C.S., Lond. Senior Physician and Dermatologist, Royal Albert Edward Infirmary, etc., etc. London: H. K. Lewis.

So much has the study of occupational diseases advanced in the past few years that it is not surprising that books along special lines are appearing. This book shows evidence of wide search, as so many articles are quoted which have appeared in the medical press. Whilst it will assist practitioners in arriving at the causes, and so help in preventive treatment, in our opinion, it would have added to the value of the book if the author had incorporated his methods of treatment. On the whole it adds to a branch of medicine becoming yearly more important.

Medical Electricity and Rontgen Rays and Radium. By Sinclair Tousey, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Second edition, thoroughly revised and enlarged. Octavo of 1,219 pages, with 798 practical illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $7.50 net; half morocco, $9.00 net. Sole Canadian Agents: The J. F. Hartz Co., Ltd., Toronto.

Upon electricity, X-ray, fluoroscopy, radiography, Rontgenotherapy, phototherapy, radium and radiumtherapy those interested in these subjects will find in this work one of standard significance; the ambition of the work is to be a useful working companion to those engaged in electro-therapeutics and the light therapies in all branches.

After some general considerations upon medical electricity and Rontgen rays, the reader is introduced to elaborate chapters upon static and dynamic electricity. One can imagine these to be thorough and as up-to-date as it is possible to make works upon these subjects, in which, almost daily, new methods, theories, etc., are being propounded. The physiologic effects, electropathology, electrodes, ionic medication, electricity in diseases of the nervous system, all receive careful and extended treatment.

The subject of high-frequency currents is dealt with in an exhaustive manner, leaving little to be said further along that line. Some few pages are devoted to phototherapy, which has probably not as yet come into its own.

The X-ray occupies probably one half the volume, and step by step, clearly and ably, the distinguished author presents this enticing and absorbing topic. One can well believe he is reading from the work of one of the master minds, so well is the subject matter set forth. The illustrations throughout are of the first order. Some might have wished fuller details as to treatment.

Radium is the completing chapter.

As this is the second edition many will appreciate the efforts of the author to revise and enlarge, and so keep the work as near perfection as possible.

Pathological Technique. Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M.D., Associate Professor of Pathology, Harvard Medical School; and J. H. Wright, M.D., Pathologist to the Massachusetts General Hospital. Sixth edition, revised and enlarged. Octavo of 536 pages with 174 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $3.00. Sole Canadian Agents: The J. F. Hartz Co., Ltd., Toronto.

That it has reached its sixth edition shows this to be a popular and well-received book by the profession and teachers and students in pathology. The sixth edition embraces several new features, such as Bielschowsky's silver impregnation stone for nerve-fibres, etc.; Bensley's methods for the demonstration of mitochondira and other cytoplasmic granules, etc.; the complement-fixation test for gonorrhœal infection, as well as Lange's colloidal gold test for syphilis of the central nervous system. The main object of this book is to present the more useful and reliable methods of technique.

International Clinics. Volume II.; Twenty-fifth Series, 1915. Philadelphia and London, J. B. Lippincott Company. Canadian Representative, Mr. Charles Roberts, Unity Building, Montreal.

With the present volume of this excellent publication of timely and important papers, and advances in the realm of medicine, a new binding is used, which is more tasty than the previous uniform cloth boards. The illustrations are as usual of the first order, and include amongst the large number of them four colored plates. There are six papers on Diagnosis and Treatment—one, "Animal Extracts in the Treatment of Medical Diseases," by Dr. Graham Chambers, Toronto. Pediatries comes next with six papers. Medicine has six papers; Surgery five. Well-known names appear as the authors of these papers. The book is a valuable addition to medical literature, and International Clinics is deserving of a place in every medical man's library.

News Items

The Hon. Dr. Henri Beland is reported to have been interned from Belgium where he was when the war broke out.

Dalhousie University, Halifax, N.S., has received a sum of $30,000 towards the endowment of the chair of anatomy.

Dr. Alan H. N. Kennedy, Macleod, Alberta, has been appointed medical referee under the Workmen's Compensation Act of Alberta.

Professor Starkey of McGill University, Montreal, has organized a sanitary corps in connection with the Canadian Militia for overseas service.

Dr. Robert D. Rudolf, Toronto, is home on short sick leave. Dr. Rudolf was in command of No. 2 General Hospital, with the first Canadian Overseas Expeditionary Force.

Hon. Dr. R. A. Pyne, Minister of Education, Ontario, has gone to England to confer with the War Office regarding the offer of the Ontario Government of a hospital for wounded soldiers.

Mr. Irving Heward Cameron, Professor of Surgery in the University of Toronto, has gone to England, where he has been appointed consulting surgeon to the King George Hospital, London.

At the recent meeting of the Ontario Medical Association in Peterborough, Dr. Harry B. Anderson, Toronto, was elected President; and Dr. F. Arnold Clarkson, Toronto, was re-elected general secretary.

Dr. J. N. E. Brown, sometime superintendent of the Toronto General Hospital, but latterly superintendent of a general hospital in Detroit, has been appointed superintendent of the Ford General Hospital of 2,000 beds in Detroit.

Dominion Medical Monthly

And Ontario Medical Journal

EDITED BY

Medicine: Graham Chambers, R. J. Dwyer, Goldwin Howland, Geo. W. Ross, Wm. D. Young.

Surgery: Walter McKeown, Herbert A. Bruce, W. J. O. Malloch, Wallace A. Scott, George Ewart Wilson.

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Pathology and Public Health: John A. Amyot, Chas. J. C. O. Hastings, O. R. Mabee, Geo. Nasmyth.

Physiologic Therapeutics: J. Harvey Todd

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Ophthalmology: D. N. Maclennan, W. H. Lowry.

Rhinology, Laryngology and Otology: Geoffrey Boyd, Gilbert Royce.

Gynecology: F. W. Marlow, W. B. Hendry.

Genito-Urinary Surgery: T. B. Richardson, W. Warner Jones.

Anesthetics: Samuel Johnston.

GEORGE ELLIOTT, MANAGING EDITOR

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COMMENT FROM MONTH TO MONTH

Pasteurized Milk is a subject upon which there is a lack of unanimity between medical officers of health, bacteriologists and clinicians. In the main it might be said medical officers of health, bacteriologists and some physicians favor the pasteurization of all milk. A few physicians, here and there, claim to have found out its disadvantages.

High authorities in America and abroad can be quoted in favor of pasteurization, whilst a few, quoting their practical experiences, have found it does not agree with some of their patients, and so condemn the whole process.

Before pasteurization was required many physicians often found raw milk injurious. There can be no doubt that several epidemics of different diseases have been traced to raw milk.

The whole milk question is becoming almost as vexing as the alcoholic and smoke problems. Clean milk, pasteurized, versus raw milk, should win out in any medical court. Possibly when we had raw milk we watched our little patients better. We may have felt too secure with pasteurized milk. Still, when a large body of medical men can be got together to say they are not satisfied with

pasteurized milk, the time would seem opportune to reopen the whole question.

The unanimous opinion is that the ideal milk for infant feeding is certified milk. At twenty cents a quart it is prohibitive to poor people; so it is stated. Poor families, however, should make some sacrifices to gain this milk for the member requiring it for two or three years. The gain would be worth the sacrifice.

Certified milk, in some way, should be reserved for the infants and the sick. It may be that the article is procured for the rich table. If the well-to-do are able and willing to pay the price they will get the article. Municipal control of certified milk would solve the problem. Surely no one would wish to prescribe raw milk when certified milk was placed within the reach of all.

With better care and sanitary surroundings the babies of the well-to-do and rich have a better chance in life with pasteurized milk than has the poor or institutional baby. Even with raw milk, given baby for baby, the balance is in favor of the baby with the better sanitary environment and more intelligent care. The chance for the baby in the institution should be almost as good. In the insanitary environment, with often indifferent care, the chance of the babies is below par. For them certified milk should in some way be available. It should not be a staple article for any household to buy. It should be safeguarded in every direction and should be prescribed for those only who need it. Municipal control, therefore, of certified milk seems the only alternative.

Even with raw milk, previously, it was often found it would not agree with many babies. It had to be modified in many ways, in fact, in so many ways, that scarcely any two authorities agreed upon an exact modification. Physicians were almost disgusted with the many plans and details. Then recourse was had to the proprietaries. Upon these many babies thrived, and as upon raw milk, and even pasteurized milk, many died. Practitioners, at their wits' end, jumped from proprietary to proprietary, as they had before skipped from modification to modification, to boiling, to what not. Now we claim to have the ideal milk in certified milk. In the name then, of common sense, why not have ideal distribution to those who need it? The baby, first—the sick, second—others, not at all!

Editorial Notes

YE OLDE TYME VYLLAGE DOCKTOR

By J. S. Sprague, M.D., Belleville, Ont.

Partly as observed or experienced by the author, and partly as narrated sixty-five years ago to the author, by his parents and grandparents, who all had noticed or experienced in their lifetime the facts they related, or had received the correct information from their parents, and their grandparents; therefore this poetical legend, written by request of and dedicated to James S. Sprague, M.D., Belleville, Ont., is a perfect life-like pen and ink descriptive picture of Ye Antique Village Doctor, and his "modes" and "means," "schemes" and "customs," extending possibly as far back as the sixteenth century, with no allusion whatever to physicians of the present golden epoch.

Sojourning where enchanting scenes
of childhood met my gaze,
Surrounding sites reflected
startling reminiscent rays
That brought to memory's fond
review, vast visions of the past,—
Life's "morning" hopes of happiness
that "evening" sorrows blast,
and end in death at last.

Forgotten folly, freak and fun
re-occupied the brain;
In mystic recollection dream,
I lived a boy again,
And in the phantom-haze beheld
him versed in human ills,
Who posed as VILLAGE DOCTOR,
knight of sticking salve and pills,
amidst the hills, and rills.

He wore his wonted, winsome smile,
for rich and for the poor,
Betrayed bewitching courtesy
where pay is prompt and sure,
And had retained his hearty shake
with puny, physicked soul,
Who wasted wealth on malady
no doctor can control,
nor shun the "shallow shoal."

Appeared in ye brass-button coat,
high-collared "cutaway,"
Boots, belt, tie, gloves and "dicky"
added tone to his array,
Vest corded-camlet, silken "tile,"
pants corduroy, buff-shade,
Of full inflated "bosom,"
reigning craze in that decade,
that caught the modest maid.

He rode a knee-sprung Tippo nag,
stiff, steady in its jog,
Of step so uniform each joint
seemed set with wheel and cog,
While thistles decorated mane,
that stemmed the gusty gale,
Bunched burs bedecked the foretop,
and pea-straw adorned the tail,—
seized for debt at forfeit sale.

His saddle-bags of wolf skin,
that he tanned with salt and lime,
They bore a score of pygmy phials,
the custom in his time,
Containing sure specifics
that "ye olde" profession true
Up to those hours primitive,
for man's ills ever knew;
Physicians now eschew.

Smoked Cavendish tobacco
in ye "Irish meershaum" pipe;—
For ailments of the stomach
always recommended tripe;—
Believed the hair of a canine
will "surely cure his bite,"
And him who dared to disagree
he dubbed "a blatherskite":—
An ignoramus, quite.

A country call to come at once
he always answered quick,
Then in his meekly, manly manner,
sweetly soothed the sick;
And oft-times when departing
low and lovingly he said
That only for his prompt response
the patient's life had fled,—
and tears with others shed.

Each month his itemized account,
in full, was sure to come,
Not merged all into one condensed,
incomprehensive sum;
If charges were excessive,
blushes hid behind his "smirk,"
To veil fears of detection
that in guilty conscience lurk;
Ancient trick to trouble burke.

Complaisant, gracious, generous,
subscribed to every want;
When called, or sent, he freely went
to pauper's hovel-haunt;
To church at week-day prayer, was
there, and let his voice be heard;
And bills, if paid on Sunday,
only fools, he said, demurred;—
too often it occurred.

In cases where 'twas naught but
scare, when pulse the doctor felt,
Magnesia aqua, tinctured, he
prescribed, and deftly dealt,
Then ordered table-spoon full
dose, each hour for the spine,
To be continued strictly 'till
he called again at nine
with milder anodyne.

Occasion in a wealthy home,
he never deemed it wrong
To practice tact, that many lacked,
"attendance to prolong,"
In which he oft succeeded well,
his faithful friends among,
And diagnosed dyspepsia
as congestion of the lung;—
And many a heart he wrung.

He'd mince-meat any "blawsted quack,"
if "spotted" spooning 'round;
Possessed sufficient calibre
himself to cover ground;
The ailments flesh is heir to,
were, by him, all understood;
Itinerant empiric greet
the doctor never would;
One of stone, or wood, as good.

In sporting he was leader
of each antiquarian game,
To dire disease he failed to cure
he gave a Hebrew name;
And claimed to be professionally
wise, and very great,
But born, 'twas thought, too early,
or alas! conceived too late
with brain not over weight.

Used opodeldoc, honey balsam,
antidote for germs,
Pukes, plasters, Wister's Pectoral,
and vermifuge for worms,
Unguentum, radway, oil of spike,
Mustang for women's woes,
With Fanstock, asafetida,
and drugs nobody knows,—
prescribed for deathly throes.

Bond's pain destroyer, Brandreth's
pills, magnetic ointment, rum,
Hive syrup, Giles emulsion,
bark and gum of spruce and plum,
Medicamentum, paragoric,
Lightning oil for aches,
With Ashford's cordial, sovereign
balm and remedy for "snakes,"
that thirst for liquor slakes.

Goose oil, internal liniment,
eye-salve, herb, shrub and root;
Precipitate and poultice
he applied from head to foot,
Then "tapped" the arm to ascertain
if blood was rich and red,
And bled and blistered, till a fellow
might as well be dead;
when such a life is led.

He bled the fat to make them lean,
the thin to make them stout,
For pimples, tumor, inflammation,
abcess, ague, gout,
Lumbago, salt rheum, rickets,
ulcer, vertigo, catarrh,
Colds, cancer, wen, consumption,
and sent many "cross the bar,"
To radiant realms afar.

Bled too for gangrene, dropsy, sprue,
hives, chicken-pox and sprain,
Piles, whooping-cough, itch, asthma,
chill, croup, gripes, and gravel pain,
Rheumatics, measles, milk-leg, mumps,
fits, fevers, running sore,
Boil, bunyon, cramp and carbuncle,
and scald-head by the score:—
Barbers bled in times of yore.

If bleeding, broth and blistering,
the patient could endure,
Next calomel, and jalap gave,
that either kill or cure,
Then mouth, if sore, the molars loose,
and bile the powders drew,
The cottage he placarded:—
"PATIENT LIKELY TO PULL THROUGH";
None doubted that he knew.

Steele's liniment, internal, mentioned,
neighbor-nurses told,
Would stop the movement of the
bowels, and harmlessly withhold
For twenty days; and during term,
none helpless need to shift,
And every day escaped the awful
suffering from the "lift";—
They thought it heaven's gift.

From retrospection here portrayed,
The inference may be drawn
Of doctor's skill and practice
in ye periods past and gone;
All handed down, in verbal
and historical relays,
Delineated in this sketch
of doctors' wiles, and ways,
in dark primeval days.

The above lines were composed by an old family friend, the late and brilliant writer, S. Stanley Howell, Esq., of Cobourg, when he had passed some several years beyond the three score and ten period and which I now can record in brief: *Vixi sexaginta et decem annos.* I may mention that while we are always engaged in instructive and varied studies, it is decidedly pleasing to learn that many admitted truths from sources least expected often present themselves, serving to establish our confirmed views, to confound them or to reject them. "Truth is true to the end of reckoning." It is a truism to state as our mission we have to study "men's desires and adorations, winged persuasions and wild destinies, splendors and glooms, and glimmering incantations of hopes and twilight fantasies." Not only these, but "men's blinded hopes, diseases, toil and prayers and winged troubles peopling daily air." Among the dearest of my aureoled memories are those of my preceptor in medicine—one of two village successors of the type my learned and venerated friend has so superlatively depicted, for we both were born in the same Prince Edward county village, but he was in his maturity when Medical Knighthood was in flower. One fact is we may say of him—the one so well delineated that he was one of those of our profession "o'er whose tomb immortal laurels ever bloom and his name and labors on Fame's eternal head-roll are worthy to be filed; and has landed safe in heaven with his shining saddle-bags."

He was skilled, and skilful enough to have lived still, if knowledge could be set up against mortality. Henley could have said of him as he said of Lord Lister: "He was sweet, unaggressive, tolerant, most humane. Wild artists liked his kindly elderhood

and cultivated his 'Philistinism,' and his smiles were full of certainties." With the words of Macbeth we should console ourselves, for our cause of sorrow must not be measured by his worth, for then it hath no end. "Yes, every god did set his seal to give the assurance of a man, and "when Nature stamped him she the die destroyed for men like him are loved, adored at home, revered abroad, and do the noblest work of God."

No other calling, says J. W. Streeter, in his book, "Doctor Tom, The Coroner of Brett," offers such opportunities for usefulness as does the practice of medicine, and this is especially true when the practice falls among people whose lives are narrowed by lack of opportunities, or restricted by physical boundaries which are difficult to overcome. A wise, cultivated, energetic and sympathetic doctor has an unlimited field of usefulness and he can daily sow the seeds of all the virtues.

He is welcomed, he is respected, he is trusted and he is loved. His example is followed, his suggestions are heeded, his orders are obeyed. It is in his power, then, to make every word, action and detail count for good to every family with which his vocation brings him in contact.

Called upon to minister to their necessities, he becomes familiar to their weaknesses and their infirmities, and the way is cleared for him to mend them. He sets an example of personal care and physical health, he suggests changes which add to the comfort of the household, and his precepts make for the general good. He is insidious, rather than aggressive, and most of the changes wrought are without apparent influence or direction, though there are times when his methods must be peremptory and forceful. In brief, to use the words of Isaiah 49: 18-23, "Kings shall be their nursing fathers, and their queens shall be their nursing mothers."

The question arises, Are our universities supplying men—doctors—like Mr. Howell's "Village Doctor," or Mr. Streeter's "Doctor Tom, The Coroner of Brett"?

Another question is: Has the young doctor realized what are or will become his life-work? Has he been taught that he has been "called and commissioned to wage war on the powers that lie in wait to overcome and overthrow human life (Osteopaths, Christian Scientists, Chiropractics, etc., etc., not considered) and that he will be reminded of the risks men insanely run from exposure to hostile elements, or still more hostile germs of what 'pricks and cracks.'"

"Befall the flesh through too much stress and strain, whereby its wily vapor fain would slip back and rejoin its source before its term?"

Brother, these analecta and memorabilia are as segments or as subjects which my thoughts briefly touch.

APPRECIATION OF THE MEDICAL PROFESSION

During the present week (May 27th) we have had a visit—or as the irreverent might say, a visitation—of about half a thousand doctors from all parts of the province. This circumstance calls the attention of the thinking to the place of the physician in our social, civic and municipal economy; and will give new play to appreciation of, as well as prejudice against, the profession. There is a popular prejudice, mostly founded, as most prejudices are, upon ignorance, against doctors as a class, and there is no limit to the disparagement associated with this prejudice. To show that they are unfounded, it is only necessary to mention one instance—doctors, the ignorant say, write their prescriptions in Latin so that the patients won't know what poisons they are being served with. Prescriptions were first written in Latin at a time when Latin was a universal language, the language of diplomacy, the language with which every educated man was familiar. A prescription written by a Canadian physician in Latin, if presented to a druggist in any country in the world, could be properly compounded through the medium of the universal medical language. This is only mentioned as a type of the ignorance and misunderstanding that create popular prejudice against physicians. Companion to this is the practice of a patient waiting till he is nearly dead before he calls a doctor, and because a miracle of healing is not done the doctor is blamed.

But in spite of all this, the doctors flourish and humanity is the gainer. Medical research, and improvement in surgical science, have made tremendous strides. Operations that a few years ago were considered capital and only to be trusted to some distinguished and expensive specialist, are now classed as minor and common with the humblest rural doctor. Not only has the healing branch of the art been vastly improved and human life prolonged, and human suffering mitigated, but the higher branch of the healing art—prevention—has made immense advance; and improvement in sanitation, in face of bitter opposition from ignorance and the indifference of ignorance, has added immensely to

the promotion of the national health. When, as told at the meeting of the Medical Health Officers, as a type of general provincial conditions, systematic sanitation has in the short space of fourteen years reduced the death rate in the city of Toronto nearly sevenfold—from forty per 100,000 to seven, credit cannot be withheld from medical science applied to solving the problem of disease prevention, promotion of public health and human happiness.

We make the doctors the butt of dull wits, but as a class the doctors of Canada, as well as other countries, are the cream of professional philanthropy and human benefaction. Their intimate association with humanity in its direct needs, begets a wide catholicity of sympathy, and we find among the physicians of any town or city, doctors leading in all good works, for the welfare of its citizens. The part doctors have taken in the sublime work of caring for the suffering caused by war makes them heroes in their class. We may poke weak fun at the doctors, but they stand between us and the grim monster many a time, and only the fact that humanity is not immortal, prevents a larger demonstration of the value of their services. We have about 500 doctors in convention here now, and it is probable that in no gathering of similar numbers could be found greater collective intellectual force, applied with more trained skill, in the interests of humanity and the well-being of the community, than is to be found among the half thousand physicians now in consultation over the case of the patient, Ontario.—*Peterborough Examiner.*

SANITARY WORK IN SERBIA

The account of British relief work in Serbia issued by the Press Bureau last week, forms one of the most stirring chapters in the history of sanitary science and effort. If the state of things prevailing in Serbia in February had continued not many months could have elapsed before the whole nation would have been wiped out. When Colonel Hunter and Lieutenant-Colonel Stammer arrived at Nisch in March, apart from wounded men, there were 37,000 sick in the army, including 15,000 cases of fever, of whom more than 8,000 were suffering from typhus. There were also nearly 8,000 cases of relapsing fever, and about 1,500 of enteric. Nor was the state of the civilian population much better. Hundreds of men, women and children were to be seen by the wayside suffering untold agonies, and typhus fever making rapid inroads into the hamlets and villages as well as the larger towns. Nisch

was but a type of what was prevailing everywhere. In the hospital the patients were lying three and four in one bed with one covering for the whole, while others lay on the floor and even under the beds. At one time there were 700 patients in 200 beds, with only two doctors. There were no sanitary arrangements, no bathrooms, and the sewage from typhoid patients was discharging into an open ditch just outside the ward. In the presence of such pestilential surroundings the two representatives of the British sanitary service might well have given way to despair; but, grasping the situation, they at once set to work to bring about a change. Acting in co-operation with the Parliamentary Sanitary Committee, quarantine stations were established behind the lines; notice was given that all railway communication would be suspended for fifteen days; and, in addition, all leave from the army was stopped, soldiers on leave were immediately recalled, so that there might be no danger of re-infecting the railway after the disinfection which was to be carried out during the stoppage.

These were the first steps; what followed was a marvellous demonstration of how even the worst diseases may be fought and conquered. Supplies had to be obtained from this country. Hospitals and nurses were sent forward with all possible haste, for in the meantime Sir Thomas Lipton had issued his stirring appeal for help in this country. Pending the arrival of help, however, the two officers worked incessantly to stop the disease spreading. Disinfection was carried out with very crude agents, especially in the conflict with typhus. Lieutenant-Colonel Stammer fitted up wine barrels as disinfectors and sent them broadcast through the towns and villages. The first object was to kill the lice which swarmed the rags of the natives. Clothes, blankets, or linen were placed in the barrels and were freed from vermin within half an hour. Notification of disease was enforced and infected patients were removed from their homes to hospitals, the houses they came from being thoroughly cleansed, and their other inhabitants kept in isolation for fourteen days. Finally, it was laid down that no infectious patients should be discharged from hospital in less than four weeks. The sanitary staff went from place to place in a train specially fitted up with all necessary appliances and containing sleeping accommodation for all on board. They were gratefully welcomed by the stricken people, who were only too willing to follow any instructions that promised to relieve them of their plagues. Englishmen, knowing no word of Serbian, struggled manfully to convey their meaning in broken German to such citizens as knew a few words of that language. Happily they were fortified with pamphlets and leaflets in Serbian. And

what was the result? By the middle of April the number of typhus cases in hospital had been reduced to under 1,000, against over 8,000 existing at the commencement of the month. Relapsing fever cases were about one-half, and enteric was beginning to decrease in like ratio. Truly a magnificent bit of work and one which changed the face of Serbia in less than three months, and which, we hope, will succeed in the final banishment of fevers before another three months have gone by. Truly, the sanitary service may be justly proud of its work.—*The Sanitary Record.*

REMOVAL OF A SHELL FRAGMENT FROM THE CAVITY OF THE RIGHT VENTRICLE

At a meeting of the Académie de Médecine of Paris on May 4th, M. Beaussenat reported a most extraordinary case—the survival of a man with his right ventricle pierced by a fragment of shell which lay free in its cavity, and its successful removal by operation. Wounds of the heart have often been successfully sutured, but removal of a foreign body from one of the cavities does not appear to have been even attempted. A sergeant of the 91st Infantry Regiment was wounded at Saint-Hubert, in Argonne, on October 1st, 1914, by a hand grenade which exploded at his feet. He was hit by three projectiles—in the left deltoid region, in the front of the right thigh, and in the chest. The last projectile entered at a point a finger-breadth below and to the left of the point of the xiphoid cartilage. Severe præcordial pain and dyspnœa followed. There were hæmoptysis and abundant hemorrhage from the epigastric wound, which was arrested by applying a dressing. After remaining 24 hours at a dressing station he was removed to hospital. The hæmoptysis was arrested on the fifth day. A radioscopic examination of the chest was made and the report was: "Shrapnel bullet entirely free on the diaphragm." He was never free from painful dyspnœa on effort and præcordial anguish, especially at night. He was taken to Nantes, where, after several radiographic and radioscopic examinations, the diagnosis was: "Fragment of a ball implanted in the pericardium and following all the movements of the heart." Inspector-General Delorme proposed an operation, which the patient declined. He left hospital on January 26th, 1915, on seven days' leave, in the course of which he presented himself for medical examination at Paris. He complained of a persistent sensation of anguish, which had much increased since he had left hospital. He

was admitted to Auxiliary Hospital 117 on February 4th. The face was pale and a little anxious. The breathing was short and became very rapid when he stood up, walked, or even spoke. He was careful to walk quietly, to speak slowly, and not to make brusque movements. He was more uncomfortable in the horizontal than in the vertical position, and his nights were particularly bad. He had a tendency to hold his hand over his heart, which was simply excitable without any murmur or other sign, except a kind of thrill at the apex. A radioscopic examination was made by Dr. Jaugeas, who found "a small fragment of a projectile with regular movements of little amplitude, synchronous with the heart beats and not influenced by suspension of respiratory movements, manifestly intrapericardiac." On February 17th Dr. Beaussenat made a transverse incision 13 centimetres long over the left fifth rib, which he resected with its cartilage for a distance of 8 centimetres. He pushed back the pleura and exposed and incised the pericardium; it contained liquid, not tinted, but more abundant than normal. Thinking that the projectile might be arrested in the myocardium, he explored the latter systematically. On palpation of the right ventricle he found that it contained a hard movable body. The heart was luxated out of the pericardium and so maintained by two silk loops passed into the wall of the right ventricle. The projectile was brought in contact with the external border of the ventricle near the apex and held there between the left thumb and fingers. While an assistant exercised traction on the silk threads, so as to strain the ventricular wall, M. Beaussenat carefully incised it between them. A gush of dark blood occurred and was instantly arrested by pressure with the index finger, over which during the diastole was passed a forceps and the projectile was seized and removed. It was a metallic splinter of irregular outline 1½ centimetres long and weighing 1½ grammes. The heart wound was sutured with silk and the pericardial and superficial wounds were closed. For three days there was intense dyspnœa and the pulse was feeble and irregular. A marked rhythm "à trois temps" was heard. Recovery, though interrupted by three attacks of pulmonary embolism, was complete on March 17th. Examination in April with the electro-cardioscope by Dr. Josué showed only predominance of the left ventricle.—*The Lancet.*

Publisher's Department

A Systematic Boost.—It is safe to say that the average physician is called upon to prescribe a tonic more frequently than any one other form of medication, unless it be a cathartic. Patients who are patients solely because they are tired, "run down" and generally debilitated, are constant visitors at the physician's office. Such individuals need something that will boost them up to their normal point of resistance and then hold them there: in other words, not a mere temporary stimulation, with secondary depression, but a permanent help to the revitalization of the blood and a general reconstruction. Pepto-Mangan (Gude) is not only prompt in action as an encourager of appetite and better spirits, but is also distinctly efficient as a blood builder and systemic reconstituent. It is pleasant, non-irritant, free from constipating effect and does not stain the teeth. It is thus a general constitutional tonic of positive service in all conditions of general devitalization.

Department of Agriculture Advises That Milk be Pasteurized at Low Temperatures.—In order to determine the best way of pasteurizing milk so as to kill the disease germs, and yet not give the milk a cooked flavor or lessen its nutritive value, the Department of Agriculture, through its Dairy Division, has been conducting a series of experiments, treating milk at different temperatures and for different lengths of time. According to the report on these experiments in Bulletin 166 of the Bureau of Animal Industry, when milk is pasteurized at 145° F. for 30 minutes the chemical changes are so slight that it is unlikely that the protein (muscle-building element), or the phosphates of lime and magnesia are rendered less digestible than they are in raw milk.

Moreover, from a bacteriological standpoint, pasteurizing at low temperatures is found to be more satisfactory than pasteurizing at high temperatures. According to Bulletins 126 and 161, where low temperatures are used the majority of bacteria that survive are lactic acid organisms, which play an important part in the normal souring of milk. When milk is efficiently pasteurized at high temperatures, the bacteria which survive are largely of the putrefactive kinds, and milk so treated, if kept for any length of time, has a tendency to rot instead of sour. The Department recommends that "When market milk is pasteurized it should be heated to about 145° Fahr., and held at that temperature for 30 minutes."

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Original Articles

ADDRESS ON SURGERY*

BY FRANCIS J. SHEPHERD, M.D., LL.D., F.R.C.S.

It is one of the privileges of age to be reminiscent, and when asked to give this address I thought it would be interesting to look back and see what changes have taken place in the science and art of surgery since I entered as a medical student in the fall of 1869.

It is well for the present generation of surgeons to be aware of the condition of affairs in the pre-antiseptic days and to have some conception of the dangers and difficulties of surgery at that time. What is easy to the present generation was a source of difficulty then, and it is well to know that surgery was not born thoroughly equipped as was Minerva, the Goddess of Wisdom and Wars, Arts and Sciences, when she sprung full grown and completely armed from the brain of Jupiter.

The efficiency of surgery has been arrived at by a slow process of evolution. There had been but little advance in surgery for some time before I entered medicine. Lister was just being heard of in Glasgow as applying Pasteur's germ theory to surgery and trying to find some substance which would destroy the organisms he was convinced were the cause of sepsis and suppuration. But the germ theory was not yet admitted by surgeons in general and especially were the London surgeons opposed to it and even made fun of Lister's antiseptic efforts.

I remember my first experience of surgical responsibility was sitting up at night after an amputation of the thigh so as to be present and apply a tourniquet in case of secondary hemorrhage. At that time only one end of the silk ligatures was cut

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short, the other hanging out of one corner of the flap, chiefly, they said, for drainage. During my student days it was rare to have an amputation of the thigh live until the ligature came away on the 14th day, the patient usually died of shock or pyemia the first week; I do not think I ever saw an amputation of the thigh high up recover.

Surgical operations then consisted chiefly of removal of external tumors, amputations for injury or disease, cutting for stone and opening abscesses. The abdomen was a *mare clausum*, and if by accident the peritoneal cavity was opened the fate of that patient was sealed and the church was his only salvation. Still the surgeons of that day were most skilled operators as they had learned their business in pre-anesthetic times, and it was a common thing to see an amputation of the leg or thigh done in sixty seconds and a complete lateral lithotomy under two minutes. I remember Sir William Ferguson of King's College Hospital, London, operating in a dress suit with much expanse of shirt front and cuffs and being so clean an operator that he prided himself on never getting a drop of blood on his white shirt. Most operators used an old frock coat which was never cleaned and so was soaked in the gore of many victims. Some washed their hands, others did not, the field of operation was rarely cleansed except the wound caused by injury was full of dirt. All compound fractures of the leg were amputated at once so as to avoid certain death from sepsis, the only exception was when the bone had made a punctured wound, the wound would be closed by congealed blood and healed in that way under clot.

In my last year of studentship Professor Wm. Fraser, who had spent the summer in Scotland, introduced Lister's method of opening abscesses under lint soaked in carbolic oil. At this time there was no such thing as trained nursing, any old person was employed who thought they had a gift that way, and did their best; many of them imbibed, for at that time every patient was given an allowance of beer, whiskey, or port wine daily and the night nurses especially were seldom sober. I remember in the seventies paying a visit to a patient in the hospital on whom I had that morning operated for strangulated hernia. I could not find the nurse at all (she supervised three flats), but my patient I found sitting out on the verandah in his night shirt smoking a pipe and all the obstreperous or delirious patients strapped to their beds. It was a cool evening in the autumn and my patient died of pneumonia some days afterwards.

I do not want to imply that we had no successes, for I have seen very many brilliant successful lithotomies, removal of tumors and amputations, and I have even seen healing by first intention. But it was strange that one of our surgeons, a very skilful operator, but who after operating visited his patients but seldom, had better results than his colleague, a much more conscientious man, who also was fond of pathology and liked to see the post-mortems on his patients and fussed a good deal over his cases. Needless to say the latter's results were not remarkably good.

We knew nothing about germs at that time and thought that putrefaction was caused by the oxygen of the air. When Pasteur demonstrated that putrefaction was caused by microbes Lister by his previous work, from his student days under Sharpey, was prepared to welcome this discovery and he says in his Third Huxley Lecture: "Thus was presented a new problem; not to exclude oxygen from wounds, which was impossible, but to protect them from the living causes of decomposition by means which should disturb the tissues as little as is consistent with the attainment of the essential object." Since then it has been proved that putrefaction is not the only cause of serious mischief in wounds, for there are microbes which are odorless and yet produce profound septic effects.

At this period and for some time after it was a common thing for the operating room orderly to be also orderly in the post-mortem room. Hence the better results of operations performed in the country or private houses than those performed in hospitals. When I visited London in 1873 I found the results of the surgeons fairly good, in fact London and English surgery was always clean and the results excellent for that period, and this is one of the reasons why antiseptic surgery made such slow progress in London. Whilst in Germany the surgery of that time was very dirty and neither personal cleanliness nor the cleanliness of hospitals a distinguishing feature, the results were accordingly bad, hence Listerism was adopted with avidity and the change to antiseptic surgery revolutionized the German methods with such amazing improvement in the death rate that soon they out-Listered Lister.

When I was in Vienna in 1874-5 antiseptics had not yet been introduced and surgical mortality was tremendous. I never saw an operation for strangulated hernia recover and sepsis prevailed everywhere, even the great Billroth had often disastrous results; twelve years later when I visited Europe

again what a change had taken place! Hospitals and operators clean to excess; operations never hitherto attempted performed successfully, a very low surgical mortality, and surgery invading every region of the body and annexing territory which formerly was thought to be the exclusive domain of the physicians.

In 1874 I visited Edinburgh to see Professor Lister's work and a great impression it made upon me. John Cheyne was then his house surgeon and if I remember aright he manipulated the hand spray of carbolic solution which was used during the operation and dressings. What struck me most was the excessive care of Lister in his dressings, the great attention to detail and cleanliness; and in operating, his great deliberation. The spray was used on the supposition that most of the germs which infected wounds came from the atmospheric dust; when Lister found that the atmosphere was comparatively harmless and that the organisms were on the skin of the patients and the hands and implements of the operator he abandoned the spray. As many of you may remember, the hand spray was replaced by a steam spray. In Germany this was furnished by a large boiler placed in an adjoining room which poured forth carbolic acid spray into the operating room and covered everybody with a thick Scotch mist; in fact one could scarcely see across the room and to protect oneself waterproof clothing had to be worn. This of course was German excess. Later von Bruns led a crusade against the spray and "fort mit dem spray" was the cry and soon the spray was replaced in Germany by irrigation. Niagaras of water were poured over the patient and the field of operation, so much so that the floors were flooded and the onlookers had to get on chairs whilst the operator and his assistants waded through the flood in long rubber boots.

Soon irrigation became out of fashion and aseptic and dry dressings were adopted which in ordinary surgery are used to the present day. In military surgery asepticism is impossible and resort is once more being had to antiseptics with the best results.

The scope of surgery in comparison to what it was forty years ago is enormous—no cavity of the body is now shunned by the surgeon; had such advances been prophesied in the middle of last century the lunatic asylum would have been thought a fit place for the prophet.

As I have said before one of the great troubles after amputation was secondary hemorrhage—one saw hanging out of

one corner of the stump a number of waxed linen or silk threads; some were on small vessels, others on large, and the surgeon making his rounds looked at the stump and pulled at one or other of these threads to see if they had ulcerated sufficiently to come away! Very often with the ligature came a gush of blood. This secondary hemorrhage required the reopening of the stump and the vessel secured, no easy matter with the instruments then in use and in a suppurating granulation surface. Sir James Y. Simpson, to do away with ligatures and their dangers, introduced what he called acupressure, a method to compress arteries by means of metallic needles introduced in various ways. At the same time Lister began to cut both ends of his ligatures short and leave them to their fate buried in the tissues; this was before he introduced absorbable ligatures of catgut. Although good results were obtained from acupressure, and many cases of healing by first intention were reported, yet Lister's ligatures won the day and soon Simpson's method passed away and is now quite forgotten.

Abdominal operations are now as safe as any other major cases and our knowledge of germs, how to control their evil effects and to prevent their invasion, makes most operations in surgery comparatively without much risk. Appendicitis, or inflammation of the bowels as it was called, was thought to be a rare disease and was not considered at all surgical. The common medical term was typhlitis, with peri—or para—as additions. It was thought to commence in the cellular tissue around the cecum or typhlus, or cecus. In a short time our greater knowledge of pathology properly placed the blame on the appendix. Operations were then rarely performed, except for peri-typhlitic abscess. At first operations were never undertaken unless pus was found by the exploring needle, and the search for the appendix was always a matter of difficulty. The first twelve cases I operated on all died, because I was only called in to operate when the physician thought he could do no more; then the surgeon was the *dernier ressort*. At this time diagnosis was not easy and appendicitis was often mistaken for typhoid. It seems absurd now to know with what difficulty physicians and surgeons diagnosed this disease and then only after many anxious and serious consultations, whilst now every man and child in the street could make a diagnosis from a verbal description of the case. But so it is, and what is difficult and obscure in one generation often becomes simple and clear in the next.

It is strange to look back and see the gradual growth of abdominal surgery; at first the only operation on the abdomen was an obligatory one, viz. for strangulated hernia and this was done with serious forebodings. Soon operations were performed for ovarian tumors and ovaries without tumors, and successfully carried out by Lawson Tait, Spencer Wells, Keith and others. In fact we are indebted largely to Lawson Tait for his pioneer work in abdominal and especially pelvic surgery. Ovariotomies, since MacDowell's famous case, were performed from time to time with occasional success, but when I studied in London every case I saw operated on proved fatal. With our knowledge of the germ theory and with the introduction of Listerism the obstacles to recovery were removed and ovariotomy became a common and safe operation. Surgeons rapidly adopted Listerism and "boomed" it and in a short time were doing all the operations hitherto only suggested, such as excision of the stomach, intestines, kidney, spleen, et cetera. From pest houses German hospitals became sanitariums and as the *Lancet* of August 13th, 1881, observed at the time "our admiration for the change effected is only equalled by our horror of previous conditions." Many German surgeons advocated the compulsory use of antiseptics and Professor Naussbaum, in 1881, suggested the following law: "Any person summoned to heal an accidental case or wound, must no longer close it up with an adhesive plaster, nor examine or disturb it with a finger which has not been disinfected; but after the surgeon has washed his hands and the wound with some disinfectant (for which purpose a five per cent. solution of carbolic acid seems to be the most convenient), the wound must be thoroughly protected with an antiseptic dressing. Such dressing may consist of carbolized jute or wadding, chloride of zinc wadding, or some other well known antiseptic material."

Simon first removed the kidney designedly in 1869. In 1881 an occasional excision of the kidney is reported and papers were read on the subject at the International Medical Congress in London in 1881. I think it was Mr. Henry Morris who first successfully removed a stone from the kidney where there was no suppuration (in 1880). I first excised a kidney successfully in 1884 and a stone in 1886. My first gall stone operation was in 1890.

It is interesting to look back on the past literature and to study the conditions of surgery at that time. In 1888 I gave the surgical address before the Canadian Medical Associa-

tion in Ottawa and spoke among other things of the surgery of the abdomen and the information given below is extracted from that address: "It was strongly advised that all cases of intestinal obstruction be handed over to the surgeon and not kept on medical treatment by the physician until it was too late to operate." Surgical treatment was recommended in all cases of suppurative appendicitis and a few advanced surgeons advocated early operations. Typhoid perforations were being occasionally operated upon, always with fatal results. It was found out accidentally when operating for tumor in a mistaken diagnosis that tubercular peritonitis could be cured by opening the peritoneal cavity. Perforating gunshot wounds of the abdomen were being immediately operated upon. Radical cure of hernia was becoming a safe and fashionable operation. The surgery of the gall bladder was looming up as an accepted and successful fact. Lawson Tait reported thirty cases of cholecystostomy with one death. Crede of Dresden had had only five cases with one death, and Langenbuch of Berlin had collected 75 cases of cholecystotomy with 2 relapses, 11 deaths, and 16 cases with fistula resulting. He advised against operation when the stones were in the common duct.

Occasionally cases of operations on the stomach, intestines, spleen and pancreas were reported but with few successes. The operations of nephrectomy and nephro-lithotomy had become well established. In 1888 prostatic surgery was yet in its fatal infancy, though tumors of the bladder were being operated on. In other departments of surgery, the brain and spinal cord were fields of operation just becoming known through the work of Victor Horsley, Keen, Macewen, Weir and others.

Surgery is still advancing and is enlisting more votaries than ever, nearly every new graduate wishes to become a surgeon. Every small place has now a well-equipped hospital with excellent facilities and every opportunity is offered for the prosecution of the art of surgery. I am afraid there is often more art than science and much unnecessary operating because now most operations are comparatively safe. There is something more than mere mechanical skill needed by surgeons. The most important attributes of a surgeon are judgment and knowledge when to operate and when not to operate and when to stop—mechanical knowledge of surgery can never teach this. I remember some years ago visiting a small town west of Montreal and operating in a well-appointed little hospital and afterwards was shown no less than four cases of extirpation of

the uterus operated on by four different surgeons, all I am happy to say convalescing (the patients, not the surgeons). What amazed me was that there should be such a necessity for so many such operations in so small a place. In our own large hospitals in Montreal I had never seen so many cases together in the gynecological wards. I remember hearing of another case where a good surgeon in a large city of the United States operated for appendicitis on the only child of very prominent people. After removing the appendix, as the cecum, or what they thought was the cecum, was full of feces, it was opened and the feces evacuated and then the wound was closed. A few days later a fecal fistula appeared which would not close. The boy's condition from the continuous drain and irritation became bad and an anastomosis operation was advised and done. Still the fistula continued and he grew rapidly worse. He was brought to Philadelphia and a prominent surgeon was consulted, who told me the tale. An exploratory incision was made but nothing could be done as there was so much agglutination of the intestines and the boy's condition so serious. At post-mortem it was found that the appendix was still in situ and had never been removed. It was the upper part of the ileum and not the cecum from which the feces had been evacuated and which was fistulous, but the anastomosis of the ileum with the colon had been a perfect success. Hence you see here a well marked case of technical skill without knowledge. I could relate many analogous cases, but refrain.

As long ago as 1887 Professor Bergmann, at the German Scientific Medical Association, spoke the following impressive pregnant words which are applicable even to-day. He said: "There is more or less rivalry between medicine and surgery in the case of disease but further progress in surgery can only take place through an increased knowledge of internal medicine. Surgeons must now avail themselves more of the accurate means of investigation which one owes to physicians, auscultation and percussion, thermometry, chemical, microscopical and electrical investigations. As long as internal medicine remains guardian of scientific medicine and scientific principles, so long will it remain the parent tree of which surgery is only the branch. . . . . It follows from what has been said that surgery owes all its recent development to clinical medicine and just as antiseptic treatment is the product of careful observation in etiology so the energetic procedures of internal surgery will have successful results only when firmly established by the methods of

clinical medicine; otherwise surgery will sink in the hands of expert specialists to a mere display of manual dexterity."

Surgeons soon felt that they could not be good internists and have a competent knowledge of all branches of surgery, so this has led to team work in private and public hospitals which makes for such efficiency and enables the surgeons to do an enormous amount of work. This method, however, is apt to make the surgeon a mere operating machine and may not work out for the entire good of the profession. It is better for a surgical department to have a head who has gone through all the stages of medicine including a sound course in pathology and pathological chemistry and who has a good training in clinical medicine. Of course his department is equipped with a staff of specialists in pathology and chemistry but he himself should be the guiding hand and suggest and direct the work to be done. It goes without saying that every one who practises in the country must do some surgery, but he should not attempt it without having had some hospital training as a surgical interne after graduation. The tendency of the younger surgeons is to look upon the older men as having had no proper training; they call us pre-scientific and seem to think that laboratory methods are everything. I remember a pathologist giving a lecture to the incoming students in a medical school and he told them that laboratory methods had supplanted all others, including experience, which the older men prided themselves upon. I had happened to have had some ten days before a serious gunshot wound of the arm in a boy where the brachial artery and biceps muscle and some of the nerves had been shot away, where, in fact, the whole arm was shattered He had pulled the gun to him by the barrel when it went off. The whole forearm was waxlike, bloodless, cold and absolutely no circulation existed. I was advised to amputate immediately, by a colleague, but refrained, and after treating and dressing the wounded arm, wrapped the extremity in layers of cotton wool. In 24 hours there was a slight flush in the fingers and in three days the limb was warm and afterwards the case went on well. Now I asked my friend, the lecturer, how he could tell by any laboratory method, whether to amputate or wait. Of course he could give no answer, and no doubt he thought he was quite right, but he had never practised surgery and had never been up against a case which required judgment and experience, and yet he was quite willing to speak *ex cathedra* to men who were going to practise medicine and surgery. I may say the boy

alluded to has a most useful right arm, with which he can play a good game of tennis. As the Psalmist says, "I am wiser than the aged," so say the younger men of every generation, but remember what Huxley says: "We are none of us infallible, not even the youngest." I admit as we get older we become more conservative, and perhaps procrastinate, but this is the infallible result of long experience.

How many methods have we older men seen come and go, landed to the skies by eloquent advocates both in societies and journals: we often hear of remedies and methods by which every case is cured and dozens who have made use of them print undigested articles confirming the originator's views and improving on them; some would find them only suitable on selected cases, and finally this remedy or method is forgotten because it is of no value and could not stand the test of experience. As Byron said in his poem, "English Bards and Scotch Reviewers,"

"Thus saith the Preacher: 'Naught beneath the sun is new.
What varied wonders tempt us as they pass?
The cow-pox, tractors, galvanism, gas,
In turns appear to make the vulgar stare
Till the swell'n bubble bursts and all is air?"

Although I am as much an advocate of laboratory methods as the most scientific younger surgeon, yet they should not replace those powers of observation which are the great asset of the medical man. I fear it is tending to do so, for the recent graduate dares not diagnose a fracture without X-rays, a typhoid fever without a Widal, syphilis without a Wassermann, and so on. We cannot always carry a laboratory or hospital appliances about with us, so we should not depend too much on the use of mechanical means in diagnosing disease, and should not let our powers of observation atrophy. Time, no doubt, will remedy this state of affairs and things will bear their proper proportion to one another. Some are very sceptical that this will occur and think there is nothing true or sure but mutability. As Moore says,

"This world is all a fleeting show,
For man's illusion given;
The smiles of joy, the tears of woe,
Deceitful shine, deceitful flow,
There's nothing sure but Heaven."

For the sake of the wounded in the present awful war, it is fortunate that surgery has attained such a high pitch of efficiency and that hospitals are now so well arranged and managed. What a contrast to that which existed in the Crimean War, when Florence Nightingale did so much to clean out the Augean Stables whose doors were closed with red tape. Now from the field to the base hospital everything is done for the wounded in the quickest possible time, and in the most skilful manner, and the proportion of recoveries is proportionately large. I am glad that Canada is doing so well and is so eager to establish hospitals. The Universities deserve great commendation for the way they have come forward to man the various hospitals with their best teachers, best surgeons and physicians and specialists. All honor to them and to the Canadian nurses and students who go with them. We are all sure the work will be well and scientifically done, and reflect credit not only on the British Empire, but on the whole of Canada and its professional men and women. May God go with them and prosper them!

CLEAN DERMATOLOGY*

By Dr. Alfred Eddowes,
President of the New London Dermatological Society.

It was a relief to my mind when you requested me to open a discussion instead of reading a formal address on becoming your President for the current year—a year that will ever be remembered for Germanic brutality. While choosing a subject, I asked myself what had helped me most in my own practice. The answer seemed to come involuntarily:—A guiding principle in the management of skin diseases—in two words *clean dermatology*. In surgery no advance has ever equalled in importance that resulting from the introduction of the antiseptic principle by the immortal Lister. In dermatology we cannot apply antiseptic treatment quite as in surgery. In surgery we prevent infection or we destroy it and then seek to prevent recurrence. In dermatology our difficulty is to obtain asepsis. If we can do this in many cases the treatment is finished, the case is cured. Observe the difficulty,

*Read at the May meeting of the New London Dermatological Society.

say, in a case of ringworm, red eczema, sycosis: mild or strong remedies may fail unless handled with skill.

Quite recently I saw a case of impetigo spread all over the face of a child who had had too weak a lotion applied for the initial small lesions. If we apply too mild antiseptics we allow disease to spread. If we use them too strong the skin inflames. The problem is quite different from that ordinarily involved in surgery —so we want a modified guiding principle. We all know that dermatologists have largely employed a spirit solution of soap and many also know that Besnier often used soap and water on eczematous surfaces, still this idea seems to have remained much as antiseptics before Lister's time. Housekeepers fumed jars for fruit, heated jam-pots, boiled milk pails and salted bacon long before Lister was born. It required Lister to explain and give us our guiding principle. Yet, just think of the time it took to convince the world and even the profession. I am sure that the science which we possess, thanks to Lister, has not yet become so practically applied in dermatology as it ought to be to-day.

I will proceed to prove my contention by a brief account of illustrative cases. Some months ago I saw several cases of red eczema on scalps of children in a skin clinic. It was pointed out to me that these cases were very rebellious and I was asked if I could suggest anything for them.

My answer was—clean once with spirit and then cover up with a paste for a whole week. This chemical cleaning acted like magic. All who saw the result want to get such cases now instead of fighting shy of them as before. The cleaning did it. The paste was already being used.

In 1902 I published notes of an exceptionally bad case of eczema cured chiefly by cleaning. I will read the notes as they are very brief.

"*Acute eczema affecting head, trunk, and limbs.*—This case was a very severe test for any kind of treatment, and proved instructive. The patient, a lady between thirty and forty years of age, had suffered continuously, and more or less severely from eczema for fifteen months before I first saw her. She was often confined to bed, and had to take soporifics to procure sleep. I found her so worried by "itching, smarting and burning," and many of the patches were so inclined to weep and form crusts, and were so tender, that I had no doubt about the suitability of zinc-gelatine as a dressing for most of them. So I went home and soon returned with my glue-pot full of the necessary material. As soon as I produced it from my bag the patient exclaimed, 'If that is zinc-gelatine, please don't put it on me. Mr. ——' (one of the

ablest of living surgeons) 'used it and found it did not suit me. I cannot bear it.' My reply was to this effect: 'I am sorry and surprised to hear that. If so able a surgeon has failed to cure you, I must undertake your case with a sense of grave responsibility. Nevertheless, as his preparation and mode of application may have been different from mine, and the condition of your skin may have altered, I hope you will let me treat you as I think best.' She agreed with me, and I proceeded to cleanse and dry all patches about to be dressed with the gelatine in my own way—i.e., with spirit and powder, taking care always that the powder used contained a permanent non-irritating, rather insoluble antiseptic. There is one remedy which fulfils this purpose better than any other with which I am acquainted, and I have advocated its use for that reason on several occasions during the last ten years. (10 years plus 12 equals 22 years ago.) I mean calomel. The skin, then, was wetted or gently wiped with spirit, and, while the spirit was evaporating, a dust was applied, composed of four parts of starch and one of calomel. Time was then given for the spirit to thoroughly dry up or soak in before the gelatine was painted on, and covered in turn in the ordinary way by thin bandages or cotton wool. We must provide against rancidity of the fatty secretions of the skin as well as chemical changes in the sweat and *debris* of dead epithelial cells, and I do not see how we can expect this necessary asepsis if we paint our gelatine on a greasy, dirty (i.e., septic) surface. To do so is to forget to apply the greatest teaching of modern surgery. The reason why we should wait for the evaporation of spirit is a practical point of importance. It is this: If the gelatine comes in contact with the spirit it tends to become hardened and therefore does not adhere to the skin, especially at parts subject to much movement. As I anticipated, the lady changed her opinion of 'the gelatine' in a few hours, and made a rapid recovery. Five years and more have elapsed without any return of the disease."

I hope to show a case to-day which many of you saw several months ago. *Generalized eczema* in an otherwise healthy, strong young man. He had history of a bicycle rash which gradually developed into an awful and almost fatal eczema: which existed for two years in defiance of hospital treatment in London and elsewhere. He had injections of auto-vaccine (staph. alb.), but all to no purpose. He will tell you that he attributes his cure chiefly to use of spirit followed by boric acid as lotion or ointment. So do I. The secret of success was the principle "*clean*" antiseptically, then soothe with dressings mild but antiseptic enough to hold on to the ground gained.

Here is an instructive case. A relative of mine, himself a medical man, contracted furunculosis of the nostrils in the tropics, for which he was given an antiseptic ointment. This was applied for months before I was consulted. I found pus in a follicle which in culture gave a pure white staphylococcus. I advised a continuance of the ointment and a cleaning with methylated spirit on an extemporised brush made of cotton wool twisted on a match. Improvement was apparent within a few days. Lately I hear the patient thinks the spirit cleaning cured him. In this simple manner several cases of this kind which have come under my care have been cured after other methods including use of vaccines had completely failed. The principle is extremely useful in the treatment of infected nails and in even the most rebellious cases of psoriasis.

Here is a little list of substances for cleaning in mild cases and in severe, in infancy and in manhood. Boric acid solution, carbolic acid solutions of various strengths—alcohol—and especially methylated spirit because, though cheap, it is exceedingly good and—in cases where we can trust patients with highly inflammable substances, ether is now and then most efficacious. When there is a doubt about the patient's reliability it is better for the practitioner to keep this latter drug in his own hands and use it himself. I recommend it specially as an adjunct of value in parasitic diseases of the nails and in obstinate patches of psoriasis and lichenisation. It has the incidental and important advantage of dissolving vaseline!

In conclusion, pray excuse my brevity and any apparent want of care in putting these hurried lines together. My thoughts are so constantly disturbed and my time so much occupied owing to this ghastly, criminal war.—*Medical Press and Circular.*

SKIN CANCER AND ITS TREATMENT

(*Interstate Medical Journal.*)

By Isadore Dyer, Ph.B., M.D., of New Orleans.

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The types of skin cancer are numerous; in a clinical grouping, though, the pathologist would distinguish all of them as epithelioma and perhaps divide the degrees of structural changes which occur. To the practical, everyday medical man, however, the

objective evidences mean more than the microscope may prove, and this article is written to present some simple facts for the guidance of those practitioners to whom the patient comes first for advice as to simple evidences.

The predisposing influences in skin cancer are age (maturing), and the presence of anomalous lesions of the skin, such as warts, moles, seborrheal patches, prior skin diseases of persistent type (xerosis, keratosis, lupus, syphilis, etc.), and injuries of local origin.

The chief contributing causes are dandruff (lighting on a spot predisposed, eyeglasses impinging upon a roughening spot), irritation of any sort, including the persistent picking of the individual, the pipe, cigar or cigarette of the smoker.

The epithelial cancer may occur at any site, but predilects the nose, lip, eyelids, alae nasi, cheeks, ears, necks, backs of hands, and the genitals. The cancer itself may begin with a thickened scaling patch, a cystic gland (or glands), a leucodermic patch (as on the lips and tongue), in an excoriation with thickening borders and base; in a granulomatous change in a fibroma, nevus, wart or other tumor, or it may start in the site of an old scar of luetic origin.

The ages above forty predispose, and the older the subject the more likely are keratinous spots to break down into malignant growths.

Epitheliomata are often self-limited and self-destructive (e.g., the benign cystic epithelioma), but more often, once established, they persist and are apt to go on to an increased growth with proportionate destruction.

Any scaling patch on the skin covering a wart of granular base is suspicious and any scaling wart, mole, or small growth is suggestive of cancer. Seborrheic patches, particularly, found on the face and neck will go on to destructive lesions if not checked. Accumulations of epithelial cells, as in cutaneous horns, genital cystic glands, scars from old herpetic eruptions, may be the sites of explosions.

Many epithelial cancers will persist as simple excoriations, lasting for years, only to grow suddenly deeper and to develop the rodent ulcer, or, as vulgarly called, "rose cancer."

A mole, ordinarily a mere blemish, soft and flabby, will slowly grow firmer and change in the quality of its fibroid structure, the hyperplastic overgrowth becoming granulomatous and finally breaking down. A simple sessile wart on the eyelid will thicken in its base, push up the warty surface, form a granulomatous foundation and slough off, fulminating into a large ulcer, taking in even the sclera itself.

Scaling lips will fissure and heal and do this repeatedly over years; in the lines of breaking skin there will form either small thick warts or excoriated thickened masses, finally forming cancers. Pigment dots on the backs of the hands will scale in older subjects, growing darker, even black in color, and then break into small open ulcers, crusting often, but never healing.

These are types of epithelial cancers demanding early recognition and attention.

The diagnosis is easy, but usually is not made early enough.

In the movement for the dissemination of the knowledge regarding cancer, more stress should be laid on these skin lesions than is usual; for when they are disseminated, as so often happens, over the face and neck, the treatment is more uncertain and the result problematic. More than this, the metastatic possibilities are large with so many foci, any one of which may become suddenly active and destructive.

In spite of the recent widespread discussion of cancer, the treatment of cancer is still a matter of uncertainty among men who practise medicine and not surgery.

It is the object of this paper to convey some of the means available to the general practitioner in caring for skin cancer in cases where radical surgical interference is not indicated or where it may be of doubtful service. No such discussion should be undertaken, however, without the frank declaration that where a skin cancer is so placed that free excision, without undue mutilation, can be practised this should be the procedure of choice, and, when chosen, that the excision should be extensive enough to preclude any likelihood of any remnant of the growth. The types of skin cancer here considered explicitly embrace those discussed as epitheliomata and exclude those malignant growths beginning in deeper structures or primarily involving them.

The treatment of epithelial cancer is essentially destructive and may be effected by the use of acids, caustics, pastes, plasters, the thermocautery, the galvanocautery, the high frequency current, the *x*-ray, and radium.

Acids.—More harm than good results from the usual employment of acids, such as carbolic acid and nitric acid, for these only irritate the surface and actually stimulate growth. To accomplish any good with acids, the treatment should be distinctly escharotic, and the only acid which is of real service is the *trichloracetic*, or *glacial acetic acid*, used pure. The indication is only in keratinous spots in keratotic cancers where there is no great depth; in other words, where there is only a localized thickened epidermis of epithelioma proclivity. The method is carefully to

surround the area to be burned with a stiff ointment, or to paint around the spot with collodion, or to cut out of a piece of adhesive plaster an outline of the growth, so that the healthy skin may be protected against leakage of the acid; of course no ointment should cover the area to be treated. A drop or more of the acid is applied to the growth by means of a glass rod. The spot, in from two to three minutes, should turn white, *when the acid should be promptly neutralized* with carbonate of soda. The resultant eschar will dry hard, as a rule, but in any event comes away in a few days, after which the ulcer remaining should be treated as any simple ulcer, with cleanliness, stimulating dressings, etc.

Caustics.—Chloride of zinc in saturated solution and the acid *nitrate of mercury* may be exampled as the only serviceable caustics, used as such. With both, the surface of the growth (and this treatment is indicated only in small growths) must be denuded, the area about the growth protected as indicated under *acids*. The chloride of zinc solution should be applied on cotton saturated with it and should be left in place ten to twenty minutes only, lifted for examination of the area treated, replaced and reexamined until the eschar (usually white) shows. Then the area should be well washed and dried and kept wet with boric acid solution until the slough separates, which should be within three to five days.

The acid nitrate of mercury is applied just in the same manner in all particulars as the trichloracetic acid, always with the same precautions as to the time of application (about three to five minutes, *depending on the area* affected) and as to *neutralizing the acid afterwards* with bicarbonate of soda (the carbonate may also be used).

Under the head of caustics should be named *liquid air* (employed by those expert in its use, and hardly to be recommended to others) and *carbon dioxide* snow.

The *carbon dioxide* has a large usefulness in all epitheliomata of either granulomatous type or of semi-fibroid formation; it is of very little service in open ulceration, or in large areas. The ease of application commends this remedy. The *snow* is collected from an ordinary tank of carbon dioxide gas, by enveloping the escape opening of the tank with a chamois skin sac, or an improvised cylinder of blotting paper (2 or 3 in. long and $\frac{1}{2}$ in. or more in diameter) held together with an adhesive plaster. The snow packs slightly as it escapes, but may be packed into the shape of a cone by the use of an ordinary ear speculum; the author frequently uses the cap of a fountain pen to make the mold for the

application. As a pencil, held with its end against the growth, with a pair of forceps, the stick of carbon dioxide snow is firmly pressed into the spot to be treated and so held for thirty to sixty seconds, by the watch, or by counting. The process freezes the growth, which becomes red afterward and may have an area of swelling about it for twenty-four to forty-eight hours. In twenty-four hours the area in contact with the snow will blister. This blister should be allowed to collapse, dry and crust without interference. At the end of four or five days the whole top will slough off, usually leaving a simple excoriation, which heals kindly, under ordinary Z. O. plaster, daily dressings.

Pastes.—The best of the pastes is Bougard's.* It should be used with great care, and never near a mucous orifice, as the eye, genitalia, or on the lips. It should not be used over an area larger than a 25-cent piece, though it may be repeated several times in a cancer of a larger size than this, provided that a second or other subsequent application should not be made until the first or previous application has been completed in all its detail. This detail follows:—

First, denude the surface of the growth with a curette; stop the bleeding. Measure the size of the growth (or ulcerated area) carefully; then form a mold of the paste just large enough to cover the exact area; lay this over the area and cover well with Z.O. plaster. Where the area is large, the cancer painful, the patient advanced in years, 10 per cent. cocaine may be added to the paste by rubbing the cocaine (in solution) into the paste at the moment of using. There will be pain and this will last most of twelve to sixteen hours. Twenty-four hours after application the paste should be removed. The area of the eschar should then be kept moist with wet dressings, flaxseed meal or other warm poultices, until the slough comes away, usually in four or five days. The application is then "complete," and a second or other subsequent application may be made in the same manner.

The ulcer remaining after the use of the paste is usually clean and healthy and may be closed in a week to fourteen days by the use of a 15 to 20 per cent. ointment of balsam of Peru in zinc oxide ointment, changed night and morning.

*Bougard's Paste.—(1) Wheat flour, 1 dr.; (2) Starch (powdered), 1 dr.; (3) Powdered arsenious acid, 1 gr.; (4) Powdered cinnabar, 1 gr.; (5) Sal. ammoniac, 20 gr.; (6) Corrosive sublimate, 2 gr.; (7) Zinc chloride crystals, 4 dr.; (8) Boiling water, 1 oz. The first six ingredients are thoroughly mixed and reduced to powder. The chloride of zinc is dissolved in hot water. The chloride of zinc is now added *gradually* to the first six ingredients (already mixed), thoroughly stirring until a mass is formed of the consistency of putty, but jelly-like in its resiliency. The mixing should be done on a water bath and the paste when made should be kept in glass.

Plasters.—Resorcin plaster and salicylic plaster (made with rubber and lead plaster on muslin) may be employed in keratinous areas on the face, neck and hands, especially where these are numerous, superficial and in widespread patches. The plasters may remain on over night or for twenty-four to forty-eight hours at a time.

The definite advice should go with the use of the plasters to use soap and water freely and briskly when the plasters are removed, and before they are re-applied. Judgment must be exercised and must be acquired in determining when the plasters have been used long enough.

The *thermo-cautery*, *galvano-cautery*, and the *high frequency spark* may be considered under one head, as they serve the same general purpose, with differences in their individual application. The galvano-cautery is of service in lesions in the buccal cavity and on the tongue, on the borders of the eyelids and about the genitalia, where the heat from the actual cautery (Paquelin) or a stray spark from the high frequency current might be irksome or might do damage. In other places it has decidedly less usefulness.

In small lesions the fine platinum point of a Paquelin cautery has no succedaneum. It is surgically complete in its perfect destructiveness and in its aseptic eschar left behind, with no bleeding in the process. Even where lesions are large enough for removal first with the curette, the Paquelin cautery serves to complete the destruction and to stop the bleeding.

The high frequency spark may be used in larger areas, and especially where a rapid procedure is desirable. When a fine electrode is employed, definite areas may be quickly destroyed and the action may be as deep as may be desired. More than this the high frequency current is invaluable in preparing an area of disease for *x*-ray treatment.

X-Ray.—The *x*-ray, again, is a remedy which falls within the practice of the expert and should not be employed by the tyro. Its usefulness is large and serves in all kinds of skin cancer. It is of most service, however, in clearing up scaling, precancerous areas, in treating areas which have been operated, or which have been treated by the local measures above described with a view to preventing recurrences. Inoperable or relapsing cancers are often benefited by judicious *x*-ray treatment, and often rodent ulcers of considerable size and malignancy will yield to the intelligent use of the *x*-ray, administered by those expert in its application.

Radium is of supreme value in cancers which are inaccessible, as those in the concha of the ear and those on the lip. It is of

greatest value in the epitheliomata of the eyelid, when the conjunctiva and the sclera are involved. Its use is yet in the experimental stage, but the results reported by various observers and those obtained by the author of this paper justify the opinion that it is a valuable remedy when employed intelligently, and in skin cancers it has a certain known therapeutic efficiency.

Radium is expensive, and its use is, therefore, limited so far as its availability is concerned. It will clear up superficial skin cancers, even when ulcerative, with one application of 10 to 30 mgrm. of radium element, used for one or two hours. We are not citing cases, but dealing only with remedies and their methods of usage, so we shall proceed to the technique.

Where superficial action of radium is desired, the applicator (either in the form of a disc, covered with a hard varnish, or in the form of a container of silver carrying the radium salt) is covered with thin lead foil and held in contact with the lesion for the time necessary, varying with the case from one hour to several hours. The shorter the exposure the less likely a burn. Where penetration is desired, the application must be longer and the screening must be used to protect the skin and tissues from all but the gamma ray, which is the factor in penetrative treatment. The effects of radium are slow, sometimes requiring two or three weeks before a reaction shows. There is usually no destructive action from radium, if care is used in screening with brass, rubber, rubber plaster, aluminum, etc., in individual cases. The usual reaction is a profound erythema, sometimes with dermatitis and erosion of the skin, rapidly disappearing after it has reached a crisis in inflammation.

This review of skin cancer has been presented with considerable detail, almost primitive in places, but this method has been followed in order that those already practised in the treatment of skin cancer may overlook the crudities in the paper, while those most interested, the rank and file of practitioners, may be able to gather some points which may help to save some of the victims of cancer among the large number of those unconsciously condemned to this class and who only need the discerning judgment of the family physician to employ some simple means to prevent or cure those cases not yet ready for the surgeon or the expert.

124 Baronne Street.

Reviews

Dorland's American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, M.D., editor "American Illustrated Medical Dictionary." Ninth edition, revised and enlarged. 32mo. of 691 pages. Philadelphia and London: W. B. Saunders Company, 1915. Flexible leather, gold edges, plain, $1.00 net; thumb index, $1.25 net. Canadian agents: The J. F. Hartz Co., Ltd., Toronto.

That 70,000 copies of this pocket dictionary have been sold indicates that it fills a real need. The medical student can find no readier or handier aid in his studies. Indeed, it comes in handy on the general practitioner's desk. There is a table of doses in both apothecaries' and metric system, as well as a veterinary dose table, of practical import to country practitioners.

A Manual of Personal Hygiene: Proper Living upon a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, M.D., Philadelphia. Sixth edition, revised and enlarged. 12mo. of 543 pages, 138 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.50 net. Sole Canadian agents: The J. F. Hartz Co., Ltd., Toronto.

There is no better book before the public and the medical profession to-day on the subject of Personal Hygiene than that of Pyle. When it is considered that it has gone through six editions since 1900, it may be accepted as having kept closely in touch with all the advances upon the subjects it deals with. In a word, it teaches all to live upon a physiologic and hygienic basis. The new edition is copiously illustrated.

Neurographs. A Series of Neurological Studies, Cases, and Notes. By William Browning, M.D.: Brooklyn, N.Y. Alfred T. Huntington.

This is a Thymus-Stammer Number. The subject dealt with is: The Etiology of Stammering, and Methods for its Treatment. As there are 120 pages of text, it may be considered the subject is dealt with in an exhaustive manner. There are several illustrations.

News Items

Queen's University Base Hospital has gone to the Dardanelles.

Dr. Edward Kidd, Trenton, Ont., has obtained a commission in the R. A. M. C.

Dr. Wm. Gunn, Clinton, Ontario, has returned from a three months' trip to the Pacific coast.

Queen's University Hospital Corps, which sailed from Montreal on the 20th of July, has arrived in England.

Dr. Howard D. Harrison, Milton, Ont., is chief surgeon in the Welsh Metropolitan War Hospital, of 900 beds, London.

Drs. Graham Chambers, J. J. Mackenzie, Gilbert Royce, and Stanley Ryerson, Toronto, have been doing hospital work in London.

Dr. Robert D. Rudolph, Toronto, who was home on short leave, has returned to his command of No. 2 Base Hospital, Boulogne, France.

Lieutenant-Colonel Andrew R. Gordon, Toronto, is home on sick leave. He went abroad with the University of Toronto Base Hospital. His many friends in the medical profession will wish him a speedy return to his accustomed good health.

Dr. R. E. McConnell, Montreal, who was doing medical work for the British Government when war was declared, was stationed in Uganda, British East Africa. He was appointed second in seniority on the Uganda staff, and will not return to Montreal this summer as he expected.

Dominion Medical Monthly

And Ontario Medical Journal

EDITED BY

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Psychiatry: Ernest Jones, W. C. Herrman.

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Genito-Urinary Surgery: T. B. Richardson, W. Warner Jones.

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GEORGE ELLIOTT, MANAGING EDITOR

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COMMENT FROM MONTH TO MONTH

Cancer has occupied considerable space in most of our American exchanges during the past two or three months. There is a nation-wide campaign on in the United States, instituted and fostered by the American Society for the Control of Cancer. Many valuable papers have been contributed to medical societies and to the medical press. It is the aim of that Society to disseminate all knowledge at present existing with regard to this disease, and to utilize it in a great endeavor to stay the ravages of an ever-increasing menace to the American people. Towards that end the United States Census Bureau is to be called to aid; and a special report is in course of preparation on the mortality of the registration area for the year 1914. The deaths from cancer will be arranged under thirty titles of organs affected, on the lines of similar statistics compiled for England and Wales. Information will also be gathered by the Society in regard to geographical, regional and occupational distribution, as well as information from the hospitals. When completed the information will be placed before the public.

Up to the present time it is stated that no American clinic has published its results in cancer of the stomach, except the Mayo Clinic, until the results appeared of 184 cases of carcinoma of the stomach observed in the Surgical Pathological Laboratory of Johns Hopkins Hospital, Baltimore. The paper was prepared by Dr. Joseph Colt Bloodgood, and published in the Journal of The American Medical Association, June 19th, 1915. Mayo's inoperable cases are fewer in number—about thirty-nine per cent. as compared with the figures from Johns Hopkins—seventy-four per cent. It is manifest that while these results are deplorable, they have little to do with surgical technique, but are rather the direct result of late interference. For considerable time surgeons have been preaching the gospel of early diagnosis and early operation. Many people, however, still dread the knife in cancer operations in any situation; and the blame cannot always be left at the door of the physician who also recognizes his inability to offer a cure other than by surgical means. Clearly the people need educating if any advance is to be made in stemming the cancer tide.

On a recent previous occasion we called the attention of our readers to the marked increase in cancer in Ontario as set forth in the statistics of the Registrar-General for the Province. The figures will bear repeating. In 1904 the deaths from cancer were 1,253. These gradually increased each year until in 1913 they stood at 1,806. Altogether in the decade there were 14,935 deaths from cancer in the Province. Much has been done in that time to restrict typhoid fever the deaths in that decade were 5,942. Tuberculosis had 25,064.

In 1913 the Registrar-General classified the deaths from cancer as follows:

Cancer and other malignant tumors of the buccal cavity	94
Cancer and other malignant tumors of the stomach, liver	631
Cancer and other malignant tumors of the peritoneum, intestines, rectum	263
Cancer and other malignant tumors of the female genital organs	177
Cancer and other malignant tumors of the breast	126
Cancer and other malignant tumors of the skin	26
Cancer and other malignant tumors of other organs and of organs not specified	489
Total	1,806

To show the geographical distribution in Ontario the deaths are arranged by counties:

Algoma	11	Northumberland and Durham	40
Brant	26	Ontario	31
Bruce	33	Oxford	46
Carleton	100	Parry Sound	12
Dufferin	16	Peel	14
Elgin	33	Perth	34
Essex	48	Peterborough	25
Frontenac	34	Prescott and Russell	19
Grey	47	Prince Edward	16
Haldimand	9	Rainy River	2
Haliburton	1	Renfrew	33
Halton	9	Simcoe	59
Hastings	39	Stormont, Dundas and Glengarry	42
Huron	42	Sudbury	2
Kenora	5	Temiskaming	5
Kent	39	Thunder Bay	16
Lambton	29	Victoria	22
Lanark	18	Waterloo	48
Leeds and Grenville	41	Welland	31
Lennox and Addington	13	Wellington	45
Lincoln	40	Wentworth	94
Manitoulin	2	York	385
Middlesex	104		
Muskoka	11		
Nipissing	7		
Norfolk	28	Total	1,896

Whilst we would not advocate the formation of any new society to take up cancer work and prevention, there does seem to be good ground for advocating some initiation by the Ontario Medical Association, the Health Officers' Association, or the Provincial Board of Health. Each Province of the Dominion will most likely show a large and ever-increasing death rate from cancerous diseases. With the established societies already in existence something is hoped for in each Province. The movement in the direction of prevention of cancer cannot much longer be delayed.

Editorial Notes

TEACHING OF OTO-LARYNGOLOGY

A joint Committee upon the Teaching of Oto-Laryngology in the Medical Course and upon the Training to be Required of the Specialist, has recently been appointed, to represent the American Otological Society, the American Laryngological Society, the American Academy of Ophthalmology and Oto-Laryngology, the American Medical Association, and the American Laryngological, Rhinological and Otological Society. This Committee includes in its membership Dr. D. J. Gibb Wishart, Toronto, Chairman; Dr. T. J. Harris, New York, Secretary; Drs. Ballenger and Ingals, of Chicago, Dr. Levy of Danver, Dr. Dean of Iowa City, Drs. McCuen Smith, Reber, Randall and Maknen of Philadelphia, Dr. Richards of Fall River, Dr. Chas. Richardson, Washington, and Dr. Birkett of Montreal. The Committee organized in Chicago last week during the meeting of the Trilogical Society.

"ARTICLES OF FAITH" CONCERNING CANCER *

A Platform Upon Which to Unite in the Campaign of Education.

(1) That the hereditary and congenital acquirement of cancer are subjects which require much more study before any definite conclusions can be formed concerning them, and that, in the light of our present knowledge, they hold no special element of alarm.

(2) That the contagiousness or infectiousness of cancer is far from proved, the evidence to support this theory being so incomplete and inconclusive that the public need have no concern regarding it.

(3) That the communication of cancer from man to man is so rare, if it really occurs at all, that it may be practically disregarded.

* During the four-day Cancer Educational Campaign, held under the auspices of the Vermont State Medical Society, June 8-11, 1915, Dr. William Seaman Bainbridge, of New York City, presented the accompanying twenty-one "Articles of Faith" at several sessions. They form the conclusion of a paper entitled "The Cancer Patient's Dilemma. A Plea for the Standardization of What the Public Should be Taught in the Campaign of Education Concerning Cancer," which Dr. Bainbridge read at one of the sessions, and which appears in full in the Cancer Number of the *New York Medical Journal*, July 3, 1915.

(4) That those members of the public in charge of or in contact with sufferers from cancer with external manifestations, or discharges of any kind, need at most take the same precautionary measures as would be adopted in the care of any ulcer or open septic wound.

(5) That in the care of patients with cancer there is much less danger to the attendant from any possible acquirement of cancer than there is of septic infection, or blood poisoning from pus organisms.

(6) That in cancer, as in all other disease, attention to diet, exercise and proper hygienic surroundings is of distinct value.

(7) That, notwithstanding the possibility of underlying general factors, cancer may, for all practical purposes, be at present regarded as local in its beginning.

(8) That, when accessible, it may, in its incipiency, be removed so perfectly by radical operation that the chances are overwhelmingly in favor of its non-recurrence.

(9) That, when once it has advanced beyond the stage of cure, suffering in many cases may be palliated and life prolonged by surgical and other means.

(10) That while other methods of treatment may, in some cases, offer hope for the cancer victim, the evidence is conclusive that surgery, for operable cases, affords the surest present means of cure.

(11) That among the many advances in and additions to cancer treatment, the improvements in and extensions of surgical procedure surpass those in any other line, and fully maintain the pre-eminent position of surgical palliation and cure.

(12) That there is strong reason to believe that the individual risk of cancer can be diminished by the eradication, where such exist, of certain conditions which have come to be regarded as predisposing factors in its production.

(13) That some occupations, notably working in pitch, tar, paraffin, aniline or soot, and with X-rays, if not safeguarded, are conducive to the production of cancer, presumably on account of the chronic irritation or inflammation caused.

(14) That prominent among these predisposing factors, for which one should be on guard, are: general lowered nutrition; chronic irritation and inflammation; repeated acute trauma; cicatricial tissue, such as lupus and other scars, and burns; benign tumors—warts, moles, nevi (birth-marks), etc.; also that changes occurring in the character of such tumors and tissues, as well as

the occurrence of any abnormal discharge from any part of body, especially if blood-stained, are to be regarded as suspicious.

(15) That while there is some evidence that cancer is increasing, such evidence does not justify any present alarm.

(16) That suggestions which are put forward from time to time regarding eugenic, dietetic and other means of limiting cancer, should not be accepted by the public until definitely endorsed by the consensus of expert opinion. Such consensus does not exist to-day.

(17) That so far as we know there is nothing in the origin of cancer that calls for a feeling of shame or the necessity of concealment.

(18) That it will be promotive of good results if members of the public who are anxious about their health and those who wish to preserve it will, on the one hand, avoid assuming themselves to be sufferers from one or another dreadful disease, but, on the other hand, will submit themselves periodically to the family physician for a general overhauling.

(19) That at all times and under all conditions there is much to be hoped and nothing to be feared from living a normal and moderate life.

(20) That the finding of any abnormal condition about the body should be taken as an indication for competent professional and not personal attention.

(21) That watchwords for the public until "the day dawns" and the cancer problem is solved, are: Alertness without apprehension, hope without neglect, early and efficient examination where there is doubt, early and efficient treatment when the doubt has been determined.

Toronto Fair Best on Record.—There was never a time in the thirty-seven years of its history when the Canadian National Exhibition promised more real instruction and entertainment than this year. In addition to the marvellous proofs of the manner in which the patriot at home is taking care of his responsibilities in the way of increased production that the patriot at the front may have the wherewithal to keep his place in the battleline, there will be special features of patriotic and historic significance. The big war spectacle in front of the Grand Stand will be quite the most elaborate pageant ever presented by the Fair, while the Model Military Camp, aeroplane flights and the mining and torpedoing of ships in the harbor, supplemented by the war trophies, will be a revelation.

Medical Council of Canada

OCTOBER EXAMINATIONS, 1915

The examinations of the Medical Council of Canada will be held in Montreal and Halifax coincidently on October 12th, 1915.

Forms of certificate may be obtained from the Registrar at any time.

Registration for the October examination will close promptly at the Registrar's office in Ottawa on September 14th, 1915.

R. W. POWELL, M.D., Registrar
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Publisher's Department

THE PALLID SCHOOL GIRL.—In view of the modern methods of education, which force the scholar at top speed, it is not to be wondered at that the strenuous courses of study prescribed for the adolescent girl more than frequently result in a general breakdown of both health and spirits. Each winter the physician is consulted in such cases and almost always finds the patient anemic, nervous and more or less devitalized. In most instances a rest of a week or two, together with an efficient tonic, enables the patient to take up her school work again with renewed energy. Pepto-Mangan (Gude) is just the hematinic needed, as it acts promptly to increase the red cells and hemoglobin and to tone up the organism generally. It is particularly suitable for young girls because it never induces or increases constipation.

THE HAY FEVER PROBLEM.—This is the time of year when the services of the physician are actively demanded by the victim of vasomotor rhinitis—a season dreaded not alone by the patient, but, not uncommonly, by his medical adviser as well. Particularly is this true of the latter if he has not kept abreast of modern ideas on the therapy of hay fever. In any event the disease is one that tries the patience and calls for the application of remedial agents that have been proved beyond peradventure. Happily there are a number of such agents from which the physician can choose—products that have passed the experimental stage and demonstrated their serviceability. We refer in this connection to some members of the Adrenalin family—Adrenalin Chloride Solution, Adrenalin Inhalant, Anesthone Cream, Anesthone Inhalant. These products, in all of which the isolated active principle of the suprarenal gland (Adrenalin) is an active constituent, have rendered long, efficient service in the treatment of hay fever, and one feels no hesitancy in heartily commending them.

Adrenalin Chloride Solution, which is perhaps more widely used than any other preparation in the treatment of hay fever, is sprayed into the nasal chambers and pharynx by means of a hand atomizer adapted for aqueous liquids, or it may be applied on a

pledget of cotton. For the former purpose it is advisable to dilute the solution as marketed (1:1000) by the addition of four to five times its volume of physiologic salt solution.

Adrenalin Inhalant, which is a solution, in an aromatized neutral oil base, of the suprarenal active principle, is well adapted for vaporization and inhalation from an oil atomizer. Used as an adjunct to Adrenalin Chloride Solution, or independently, it gives good results, parts not accessible to other medication being readily reached by the medicated vapor. It should be diluted by the addition of three to four times its volume of olive oil.

Anesthone Cream was devised by Dr. J. E. Alberts, of The Hague, Holland. It contains Adrenalin and a harmless local anesthetic (para-amido-ethyl-benzoate), incorporated in a neutral ointment base, and is applied to the inside of the nostril four or more times a day, the patient snuffing it well up after each application, the quantity required being in size about that of an ordinary pea. It affords a relief which continues for hours in many cases, a fact worth remembering when one considers the fleeting effect of most local anesthetics.

Anesthone Inhalant contains the same active ingredients as Anesthone Cream, but the proportion of Adrenalin is doubled (1:10,000). These ingredients are incorporated in an aromatized neutral oil base. It is sprayed into the nose, first being diluted with olive oil or liquid petrolatum.

Another agent which has been used with marked success in the treatment of hay fever is Mixed Infection Phylacogen. It is administered by hypodermic or intravenous injection. The initial dose should be small, a 2-C.c. dose subcutaneously or a ½-C.c. dose intravenously being suggested. Many physicians are of the opinion that the use of Mixed Infection Phylacogen marks a distinct advance in hay-fever therapy.

Patriotism the Dominant Note.—"This will be 'Patriotic Year' at the Canadian National Exhibition, and our directors desire that all exhibitors will endeavor to give effect to the patriotic idea in the decoration of their booths." This is a paragraph taken from a circular sent out by the Exhibition officials to all exhibitors, and is in keeping with the general plan laid out for the year. The idea is to make the whole Exhibition a lesson in loyalty and Empire patriotism, and every exhibitor who gets space will be required to have a British flag or Union Jack prominently displayed. The Fair at Toronto this year will be one grand patriotic picture.

Dominion Medical Monthly
And Ontario Medical Journal

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Original Articles

CANCER OF THE UTERUS WITH SPECIAL REFERENCE TO DIAGNOSIS*

By Dr. G. Stewart Cameron, Peterboro'.

In bringing the question of Cancer of the Uterus before the attention of this meeting, and particularly of this section, I do not do so with the view of introducing any new material on the subject, but rather to reiterate what we already know of a disease that takes as its toll one woman out of eight who have passed the age of 35.

To my mind the keystone of the whole treatment lies in the early diagnosis, for once our profession is thoroughly seized with the importance of certain comparatively simple signs just so soon will the early detection of this trouble become possible, and once the early diagnosis is made, it will be an easy matter to secure the proper surgical treatment. We may go further and say that not only should our profession at large be alive to these early symptoms, but it should be their duty to instruct their patients that neglect of attention to these signs will inevitably lead, in far too many cases, to a fatal termination, for once the disease is established the possibility of successful surgical interference is extremely remote. I think, therefore, that every medical man should be a missionary among his female patients, instructing them in a sound, rational way whenever the opportunity presents itself.

I can well remember a few years ago, when a student in medicine, we were instructed in the various symptoms of cancer, such as wasting, cachexia, anorexia, and other symptoms, which to-day we all recognize as among the terminal evidences of this trouble. I stated, we all recognize, but I am sorry to say that

* Read before the Ontario Medical Association, Peterboro', May, 1915.

sometimes we find that there still persists among some members of our profession a desire to cling to these advanced signs, and not appreciate the earlier symptoms.

Anatomy.—In regard to the anatomy of the pelvic organs, I have only a word to say, and that is with reference to the lymphatic distribution. The uterus being developed in the abdomen and subsequently descended into the pelvis, retains its connection with the abdomen through the lymphatic and circulatory systems. The lymphatic drainage of the upper segment of the vagina and cervix is through the lymphaties in the base of the broad ligament, up through the iliac glands to the lumbar glands, encircling the abdominal aorta. The glands of the body and tubes drain into the iliac glands and thence upward in the same way. I consider it important to mention this as it shows the route of the lymphatic advancement directly upward into the abdomen. Through this arrangement the disease rapidly passes beyond our control, and the opportunity for successful operation is entirely eliminated.

Age.—We have been taught in considering diseases to regard age as a particular factor, and while this to a considerable extent has a bearing in many instances, when we come to consider malignancy it would be well to disregard it entirely, as there is no cancer age, the disease having appeared in almost all periods of life. There are certain broad divisions which we might make in saying that cancer of the cervix is more generally found in women at or before the climacteric, whereas cancer of the body is more frequently found in patients past the menopause. Again we might say that the cervical type is more frequently found in multiparous women, and that of the body in the nulliparous.

Heredity.—Heredity should not prejudice us in our judgment. Because the patient's forebears may have died of cancer it does not follow that she must have cancer, and, on the contrary, a clear family history should not weigh against highly suspicious symptoms.

Hæmorrhage.—Hæmorrhage is perhaps the earliest noticeable sign. When a patient presents herself complaining of loss of blood between periods, we should forget the age, whether they are married or single, and bend our energies to prove that we are not dealing with a case of cancer. The bleeding of early cancer is usually irregular and inter-menstrual and is often produced on the slightest exertion. It may be very slight and the patient pay little attention to it, but careful questioning

will usually show that it has gradually increased. If the patient is past the climacteric and comes complaining of hæmorrhage one or more years afterwards, we should be extremely suspicious that we are dealing with malignancy and again prove to our own satisfaction that it is not such. Patients may appear complaining of hæmorrhage which they say is from other pelvic organs, and one may be led astray by accepting their simple statement. Again we should be suspicious and make a thorough investigation. An instance of this occurred not long ago where a patient complained of bleeding from the bladder; subsequent examination, however, under anæsthesia, showed the bladder to be perfectly healthy, but a beginning of cancer of the body of the uterus to be present. There are certain cases in which examination shows undoubted fibromyomata present, and in view of the fact that we know that a fair percentage of these cases have cancerous involvement as well, it would be better to get microscopical findings, and know positively what changes may be going on in the endometrium.

Discharge.—The discharge at first will be leucorrhœal in character, perhaps more profuse than usual, but many of these patients having had lacerated cervixes with more or less cervicitis, one cannot say that the early discharge is at all characteristic of cancer, but as the ulceration progresses, the discharge becomes thinner and watery in character, more profuse, oftentimes brownish in color owing to admixture of blood. Still later when invasion by bacteria has taken place the discharge takes on that disagreeable fœtid odor.

Pain.—Pain is not marked. All cancer is distinguishable by its absence in early stages, so that pain as an evidence in this locality must be set aside. Later on when the disease has gained considerable headway, and we get erosion of and pressure on the nervous structures, pain will come into evidence.

Loss of Weight.—Loss of weight which we have also associated with cancer is one of the late symptoms; in fact, I have often been struck with the fat, healthy appearance of the patient, and subsequently found that she had a well marked malignant invasion, so we must not be led astray by the apparent healthy appearance of our patient.

Examination in the early case may frequently give little positive evidence. Histologically, we know that the disease begins in the squamous epithelium on the outside of the cervix, or in the columnar cells somewhere in the canal. If then we

find ulceration which has hardened edges and friable and which bleeds easily, we should at once place the case in the more than doubtful class, and proceed to get microscopical findings. On the other hand, if the disease has begun in the canal we may neither see nor feel anything, or if the cancer has begun in the body of the cervix it will have a perfectly healthy appearance. This should not satisfy us by any means. I think we are quite justified in dilating the cervix and making as thorough examination of the canal and body as possible, and to do this careful methodical curettage of every interior part is demanded. These scrapings should be washed, put into 10% formaline, and submitted at once to a competent pathologist. The uterus should be normal in size, pretty freely movable and no increased tenderness.

The loss of blood per vaginam during the child-bearing period of life is a normal procedure, but any deviation from the established menstruation must have some cause behind it and it might be well for a moment to briefly consider some of these causes.

1*st*. *Abortion.*—There will be a history of one or more missed periods with some of the other symptoms of pregnancy. These followed with free loss of blood and characteristic pain will pretty well establish the cause.

2*nd*. *Ectopic Gestation.*—Again a missed period or more with other evidences or pregnancy. The discharge is red or brownish red, irregular and oftentimes mixed with shreds of decidua. Examination will reveal a soft tumor in close apposition to the uterus, but distinct from it.

3*rd*. *Post-puerperal Hæmorrhage.*—Either after full term or more frequently after an interrupted pregnancy. Here the bleeding may be fairly free, with no pain. Examination will show a sub-involuted uterus, fairly dilated os, with blood coming from the body. Examination of the interior will usually show retained portions of placenta or a beginning chorion epithelioma.

4*th*. *Uterine or Tubal Infections.*—There is usually a history of a previous pregnancy or an unusual discharge. Bleeding is that of prolonged periods with temperature usually present at some time of day. Examination will show a painful tender mass in the pelvis closely related to the uterus.

5*th*. *Fibro-Myomata.*—The history of the bleeding here is usually that of the menstrual periods being gradually prolonged, and the flow noticeably increased. Examination will show an

irregular walled uterus, hard knobs being present, or else there is evidence of the polypoid form on the inside.

6th. Hæmorrhagic Endometritis.—This again shows increased flow, frequency of periods, and may prove very doubtful until careful examination of the scrapings has been made.

7th. Fibrous Uteri.—The hæmorrhage is at the period, profuse and much prolonged.

In conclusion, let me say that any change from the normal in the loss of blood should put us on our guard. We should take a systematic history of our patient and insist on a careful and thorough examination under anæsthesia, if necessary.

SOME OBSERVATIONS ON BLOOD PRESSURE*

By Dr. A. T. Emmerson, Goderich.

The more one studies blood-pressure the more complex the subject becomes. Normal individuals have abnormal pressures. In some it is fairly even under ordinary conditions, in others it varies much with very little change in exercise, rest, work, or manner of living; notwithstanding these variations much information may easily be acquired that is very helpful and this will be increasingly so as knowledge of this subject becomes more fully developed by those who have the proper facilities for pursuing this line of research. It is only in the last decade that there has been a marked general interest in the subject, an interest not confined to medical men who study it for the purpose of knowing its bearing in physiological and pathological conditions and how best to deal with it, but applications for certain callings require a register of the blood pressure of the applicant; notably is this so, in life insurance, where it is regarded as a very important element in the risk.

For a working knowledge there must be a consensus of opinion as to what we mean when we speak of *blood pressure*. There is the blood pressure in the various parts of the venous system, in that of the capillaries, in that of the different arteries, and in the various sub-systems of the general system. In an ordinary healthy man aged twenty the systolic pressure

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in the aorta is about 175mm., in the brachial 120mm., in the radial 115mm., and in the capillaries about 60mm.

In its common acceptation it is restricted to the arterial system and in that system to the tension in the radial or brachial artery. The pressure in the latter is slightly higher than that in the former. Blood pressure is the measure of the heart's power to force the blood through the arterial system. Four of the main factors in maintaining this pressure are, the energy of the heart, the resistance of the arterioles, the elasticity of the vessel walls, and the amount of the blood in the vessels.

There are some other terms we use that may be defined as they are commonly understood. There is the *systolic pressure*, which is the maximum pressure in a given vessel during a heart systole. The *diastolic pressure*, which is the lowest pressure in a given vessel during a heart diastole. The *pulse pressure* which is the variation during a cardiac cycle, that is, it is the difference between the systolic and diastolic pressures. The *mean pressure*, which is the average pressure at a given point. This, however, is not the half of the blood pressure, because the pressure at the systolic level remains for a much shorter time than at the diastolic level, also the first part of the drop is more rapid than the latter part, and these will vary in different individuals, the mean pressure may approximately be taken as about one-third of the pulse pressure. There is the *lateral pressure*, which is that exerted by the blood against the wall of the vessel. Then there is the *end pressure*, which is that exerted against an obstruction in the lumen of the vessel, and is of course greater than the lateral pressure, the difference being the effective pressure that produces the blood flow at the point.

The easiest way to obtain the systolic and diastolic pressures is by the armlet method and the stethoscope. Place the armlet about an inch or so above the elbow and the bell of the stethoscope on the brachial artery just below the armlet. As the armlet is inflated a pulse beat is faintly heard. This becomes rapidly loud, then slowly lessens until no sound is heard. Now let a little air slowly escape and the pulse beat will return. The reading at which it is first heard on its return will be the *systolic pressure*. As more air is allowed to escape, the loudness or amplitude of the beat will be heard increasing until it reaches its highest limit, then it quickly dies away. The reading when this fullest sound is heard will indicate the *diastolic* and corresponds with the time when the pressure of the armlet on the vessel is equal to the pressure inside the vessel. The fibrous coat with the encompass-

ing tissues takes the place of the armlet when it is removed. This reading will also be noticed to correspond with the greatest oscillations of the indicator on the sphygmometer.

The normal pressure is best obtained if taken two or three hours after a meal, the person having rested during that time and being in the recumbent position while the reading is made, and having the arm on the same level with the heart. If the pressure is found abnormal it is wise to try the other arm.

Pressure Readings.—It is necessary that we know at least approximately the average pressure readings in normal healthy individuals. I have not been able to test this sufficiently to do more than make a fair working scale, and am aware it is likely to require correction. In making this scale I have used the nearest typical numbers for the purpose of easy remembrance.

For age	20,	diastolic	pressure	90mm.,	systolic	pressure	120mm.
"	"	30	"	"	95mm.	"	" 125mm.
"	"	40	"	"	100mm.	"	" 130mm.
"	"	50	"	"	105mm.	"	" 135mm.
"	"	60	"	"	110mm.	"	" 145mm.

The vanishing point of the pulse when we use the stethoscope is from ten to fifteen millimeters below the diastolic pressure. The readings for females are said to be about ten millimeters lower than those in males for corresponding ages.

When the person is in the recumbent position the pressure in the arm and leg should be about the same. There is one disease in which there is always about twenty to forty millimeters higher pressure in the leg than in the arm, that is, in aorta regurgitation.

To test the reserve energy of the heart, take the pressure when the person is at rest, then let him exercise, such as going upstairs. This should raise the pressure from ten to thirty millimeters higher. If it remains stationary it is because of lack of power in the heart to meet the demand.

While knowing the blood pressure is a very valuable aid in our work, we must not place undue weight on a single reading; there should be a series, especially if the readings be abnormal; nor should an observation be too prolonged, because the interruption of the circulation in the extremity will in itself, if continued, cause changes in the arm pressure.

Physiological Variations.—In order to know the significance of blood pressure in pathological conditions we need to bear in

mind the variations in healthy persons and the conditions that may change it from normal to a high or low tension. We know that blood tension depends on at least four things, the amount of blood in the vessels, the force of the heart, the elasticity of the arterial walls, and the resistance in the arterioles. These will vary in normal cases in wide limits, by exercise, rest, digestion, fasting, positions of body, altitude, excitement such as from anger, fright, fear, joy or grief. Take an example of muscular exertion,—a man, aged twenty-six, by running up three flights of stairs, increased his systolic pressure by forty millimeters and his diastolic by ten millimeters. A brisk purgative or a profuse perspiration will lower the pressure. High altitude gives a venous engorgement and hence a lowering of arterial pressure and a quickening of the heart action; as an example of this it was noted in a case that the pulse was eighty and the blood tension one hundred and twenty-six millimeters at the sea level, while at six thousand feet above the pulse was ninety-nine and the blood pressure one hundred and eighteen.

The kind of air breathed, or the food eaten, or luxuries indulged in, will alter the pressure. Tobacco raises the tension, but its continued use or over-use will cause a peculiar condition in that the pressure is raised immediately after the smoke is taken, and then later there will be a low pressure. A boy in the out-department of a hospital was found to have a systolic pressure of 200 mm. On inquiring, he had just smoked a cigarette; and a young woman with a pressure of 210mm. had just previously smoked a cigar. In neither case could any pathological condition be found to account for the high pressure. Thus how very far apart may be the physiological variations.

It might not be amiss to give a quotation from an article in the *British Medical Journal*, by Dr. Price, on the action of digitalis on blood pressure. It is as follows:—

"In regard to the general subject of blood pressure one important point has been elicited. It is this, that in a considerable, indeed in almost a large, percentage of cases I have found a considerable fluctuation in the blood pressure from day to day. I am not now referring to variations associated with meals, but to diurnal variations which appear to be quite independent of these. Let me just mention one case to illustrate this. I had under my care a middle-aged man with a systolic pressure of about one hundred and fifty millimeters in whom there was a slightly enlarged heart, but no evidence of kidney

disease. He was under my observation in the hospital for about five months. For many weeks I kept him in bed and took the blood pressure myself with the same instrument at the same time of day and under precisely the same conditions nearly every day. There were frequent variations up to twenty-six millimeters. Now, if in by no means a small proportion of cases there may be considerable normal fluctuations from day to day, we should be very careful in coming to conclusions in regard to the action of drugs on blood pressure in man. It should never be forgotten that any changes observed after the administration of a drug in disease may be due to the natural course of the malady." To this I would add the question, How much of the variations may be physiological?

Pathological Variations.—Each disease has its own particular effect on the system, and the blood pressure so varies that it must be studied in connection with the disease. But if in an apparently healthy person it is found that the systolic pressure is constantly ten millimeters or more above normal, or the diastolic ten below, the diet, mode of living, etc., should be carefully investigated, and if after proper regulation of these the hyper or hypo-tension continues we may be pretty safe in concluding, even in the absence of other evidence, that some pathological process is at work, and it will be wisdom to examine the case from time to time to ascertain what it is and in the meantime add some medicinal treatment which will be referred to later.

The Relative Importance of Diastolic and Systolic Readings.—The constant load the vascular system has to carry is of first importance, and hence no matter what other information is obtained as to the arterial pressure, this should, if possible, be found. The diastolic pressure is the measure of this load and therefore should be regarded as the measure of arterial tension. It is also the most constant and indicates the load the arteries have all the time to carry and the resistance the heart has to overcome as it begins its ventricular systole. Its variations also correspond more closely to the mean pressure.

The following illustrates the constancy of the one and the variableness of the other. Three men ran a race and their systolic pressures were increased ten, eighteen and thirty-seven millimeters respectively, while the diastolic remained the same. In another race, in which the ages were thirty, thirty-five and fifty, the diastolic remained the same for ages thirty and fifty,

while the man of thirty-five had his slightly lowered. Their systolic pressures were increased twenty-five, twenty and twenty-seven respectively. I saw a patient in consultation this spring with a systolic pressure of one hundred and ninety, a diastolic of ninety and the vanishing point of the pulse beat under the stethoscope was twenty-five. I saw him again in three weeks when his health had markedly improved. His systolic pressure was two hundred and twenty-four, the diastolic ninety-five and the vanishing point twenty. Thus while the systolic increased thirty-four millimeters the diastolic had increased only five. These are not isolated examples of the constancy of the diastolic pressure as may be verified by any one.

A physician is called in consultation and takes only the systolic pressure. The excitement caused the patient by his coming may have run the systolic fifteen or twenty millimeters above that which the attending physician regularly found it; not so would this be found as to the diastolic.

Janeway cites two cases illustrating cardiac strength which also very forcibly show the value of the diastolic pressure. A man, aged twenty-six, while at rest had a systolic pressure of one hundred and thirty-five, a diastolic of one hundred and a pulse pressure of thirty-five. After running up three flights of stairs his systolic was one hundred and seventy-five, his diastolic one hundred and twenty and his pulse pressure fifty-five, showing a good cardiac strength. Another man, whose systolic pressure was one hundred and forty, diastolic one hundred and pulse pressure forty, after two minutes exercise had a systolic pressure of one hundred and fifty-five, a diastolic of one hundred and twenty-five and therefore a pulse pressure of only thirty, which shows a deficient musculature. If the systolic alone had been considered we might have thought the increase from one hundred and forty to one hundred and fifty-five indicated a better heart than that of one hundred and thirty-five to one hundred and seventy-five, but the diastolic had increased disproportionately in the latter, so giving us a lessened pulse pressure and indicating a lack of reserve vitality.

The Gravity of High Tension.—One very important effect of high tension is on the arteries themselves. The fibrous coat may be regarded as practically fixed in the matter of distension. Now if the tension in the blood be increased the inner coat of the vessel will be pressed outwards and as the fibrous coat is fixed the vasa vasorum will be compressed between the two coats and

hence the nutrition of the vessels will be interfered with and degenerative changes will ensue, due to this lack of nutrition and the efforts of nature to overcome the abnormal tension. Also this increased tension will mean extra work for the heart. This in time will cause hypertrophy, then the normal action of the coronary vessels will be adversely affected and this will result in degenerative changes in the heart tissue with the usual sequence of results.

If we follow this inquiry in the various systems of the body we will note similar results. Take the digestive system in big eaters, and most people eat too much. More food is taken than is required and vessels that are by nature intended to supply blood for normal conditions have in these cases not only to do so to dispose of the food required to sustain the body, but also of the excess that is being continually taken, hence a high pressure in the digestive system and to a lesser extent hypertension generally with its accompanying ill results. Such also will be the results in the vessels of the stomach when that organ has to masticate for the teeth. Long continued strain either physically or mentally gives the same sequence of events. As a corollary it will be very evident that one vessel or set of vessels will not give the story of all the vessels. One radial may be more sclerosed than the other. The vessels of the digestive system more sclerosed than those in the cerebral, or vice versa.

While high tension invariably leads to arteriosclerosis, it must not be forgotten that all cases of arteriosclerosis are not necessarily cases of high blood pressure. Rudolf, in a series of observations, states that in only about fifty per cent. of cases of well marked thickening was the pressure above normal, and that there may even be fatal cases of arteriosclerosis with the tension but little raised. Another writer states that in five hundred cases of healthy miners four hundred and sixty-nine had normal blood pressure, yet four hundred and fifty-six had palpable thickening of the arteries.

Preventive Treatment.—Preventive treatment is the most important and the most difficult to carry out because as a rule the physician is not consulted until the high tension has produced ill-effects. If adults were examined as a matter of routine every two or three years, especially as to blood pressure, the average length of life would be increased. Insurance companies recognize this and there is an advocacy of offering a free examination once a year to their policy holders, believing it

would more than compensate the companies financially for the outlay by an average lengthening of the lives they have insured.

For example, it is noted in an individual after repeated examinations that the blood pressure is abnormally high, ten to fifteen millimeters or more above that which it should be. On investigation it may be found due to excessive use of tobacco, or that the person is eating too much, or not masticating properly, or that the excretory organs are at fault, there is constipation with its attending results, or the skin is neglected and not kept properly cleansed, or impure air is being breathed, or there is too long continued mental or physical strain, or the high blood pressure is the result of some morbid process, and nature may be overdoing her work. By a study of the underlying causes much may be done to lessen the pressure or prevent it increasing by giving counsel as to the manner of living, regulation of exercise, lessening of the amount of food taken, limiting the proteid diet, restricting tea, coffee, and alcohol and having attention given to the proper elimination of waste products.

Toxæmic sources should be removed, as decayed teeth, pyorrhœa, chronic appendicitis, cholecystitis, prostatitis, etc.

How often some one in the prime of life and in apparent good health dies suddenly. Probably in most of such cases there has been long continued hypertension, and had it been known the person could have been given such advice and his life so regulated that it would have been prolonged.

In some cases nature comes to our aid. Through overwork on the heart the mitral valve gives a little and there is some regurgitation, sufficient to lower the tension somewhat and so prevent the heart going on to failure or the occurrence of cerebral hæmorrhage. Thus in cases of high tension a leaky heart may act as a safety valve and not be such as to call for digitalis or other heart drugs.

Treating Blood Pressure Medicinally.—This is by no means an easy thing to do. It requires both skill and good judgment because in some part of the system there may be sclerosed vessels and the general pressure will have to be raised in order that sufficient blood be supplied to the diseased tissue to nourish it and enable it to do its work. A cirrhosed liver or a chronic nephritis will require much hypertension in order that these organs come at all near their proper and necessary functioning. Take a man of sixty with œdema of the lower extremities, dyspnœa on very little exertion and a systolic pressure of one hundred and sixty. He has been dieted, amount of fluids

limited, has been allowed very little tea, coffee, tobacco or alcohol, and the bowels have been freely evacuated; yet there has been but little improvement. Very frequently in such a case if digitalis or strophanthus be given, the tension raised to say one hundred and eighty-one, there will be a marked improvement. Here, with high tension, sclerosed vessels, a laboring and deficient circulation, digitalis, while it still further increases the tension, has really lessened the work of the heart: because if we take the pulse pressure and multiply it by the pulse rate we will get a criterion for the amount of work the heart does. Then take the increased pulse pressure after the drugs have shown their therapeutic effects and multiply this by the pulse rate and the product is less owing to the lower rate of pulse, therefore less work has been done, and in addition because of the lengthened diastole the heart itself has been rested, also better nourished, especially so, if it is true that the circulation in the coronary vessels is carried on mainly during diastole.

In addition to the digitalis and strophanthus there should be extra elimination. Ten to thirty grains of blue mass two or three times a week, followed in six or eight hours by a saline, will give beneficial results.

When the patient is doing well he may be given ten grains potassium nitrate, ten grains potassium bicarbonate and from three to five grains sodium nitrite in hot water or an aperient water every morning. This will have a marked benefit in keeping down the tension. As an addition to this a dose of blue mass and saline every week or two.

In the use of depressor drugs, it is well to bear in mind that they vary as to their length of action, the establishment of tolerance, and that it is not fully proven how beneficial they really are. Glonoin in grs. 1-100 acts for about an hour, and a tolerance is soon established, so that the dose has to be increased. Sodium nitrite in two grain doses lasts about six hours and there is no establishment of tolerance. Manitol nitrate, a drug I have not used, is given in grain doses and its effects last about six hours with no establishment of tolerance.

When the heart begins to fail, practically no matter how high the tension we must have recourse to the digitalis group of drugs, and our sphygmometer will aid us in noting improvement.

Some Conclusions:—

1. Blood pressure may vary physiologically in the same individual with wide limits.

2. It varies comparatively among individuals where we would expect it to be the same.

3. Several readings should be taken before arriving at a conclusion, and all the factors considered.

4. The diastolic reading is more important than the systolic in indicating the work the heart has to accomplish.

5. There may be arteriosclerosis and a normal pressure.

6. Preventive treatment is of first importance.

7. Attention to diet, work, rest, elimination, etc., will accomplish more than drugs and is safe ground to work upon.

8. Blood pressure, so far as findings and investigations go, is still in its infancy and no man's statements should be regarded as necessarily absolutely correct.

PARONYCHIA: A SIMPLE METHOD OF TREATMENT*

(Jour. A. M. A. July 17, 1915).

An Analysis of Three Hundred Cases.†

Isadore Seff, M.D., and Samuel Berkowitz, M.D.,

Although paronychia is only a minor ailment, nevertheless, it is attended by pain entirely out of proportion to the comparative extent of the disease. Though many methods in use for the treatment of this condition relieve the patients of pain, the treatment is as a rule prolonged and tedious, and the result in most cases is a disfigurement of the nail and cuticle.

The method which we have used in a series of 300 cases not only relieves the pain, but also shortens the course, restores the parts to the normal and always eliminates disfigurement.

Modern textbooks of surgery fail in most instances to give detailed directions for the treatment of paronychia. The time-honored method of splitting the nail longitudinally with a pair of scissors, under local or general anesthesia, and its removal by everting the halves with an artery clamp is still in vogue.

Another method consists in making parallel incisions at the side of the nail extending proximally the whole extent of the nail, and then reflecting a quadrangular flap. By this procedure the

*Reported at a stated meeting of the Practitioners' Medical Society, April 2, 1915.

†From the outpatient department of the Surgical Clinic, Beth Israel Hospital.

deformities caused by injury of the nail-bed and the matrix are avoided. The entire nail is then removed. This is a method which does not always cause disfigurement of the nail, but it is painful, and leaves scars on the finger.

Authors' Technic.

Acute and chronic cases of paronychia requiring instrumentation are treated alike. The finger is first placed flat on the table. With the eye part of a probe held at right angles to the finger nail, the cuticle is very slowly pushed backward along its entire extent until the proximal portion of the nail appears. In some, before an attempt is made to force back the cuticle, soaking the finger in hot boric acid solution facilitates this step. It is important to push backward against the cuticle and not downward against the nail, as in the acute cases the latter procedure is always painful. Now the probe is hooked under the diseased nail at the proximal portion. It is surprising to note how easily and painlessly the nail can be lifted from its bed. The edge of the nail is cut longitudinally for a distance of one-eighth inch. Each side of the cut edge is grasped with either anatomic forceps or an artery clamp, and the nail is cut transversely, special attention being paid to the complete removal of the corners. Pain is seldom produced, as owing to the formation of pus and granulation tissue, there is a separation of the proximal portion of the nail from its bed. Attempts to remove more than this separated portion of the nail are always extremely painful. The distal portion of the nail remains untouched, as it protects the underlying nailbed, and is ultimately forced off by the new-growing nail. A wet dressing of boric acid solution is applied, and the patient sent home with instructions to bathe the finger, if it becomes painful, in hot boric acid solution every three or four hours.

Analysis of Cases.

An analysis of the large number of cases of acute and chronic paronychia which we have treated is worthy of discussion.

1. Eighty-five per cent. of our cases were of the acute type.

2. The thumb or index finger was involved in about 60 per cent. of the cases.

3. About 10 per cent. of the cases were accompanied by extensive superficial subcutaneous infections.

4. The Staphylococcus pyogenes was the predominating infective organism.

5. Eighty-five per cent. had no pain during the entire operative procedure, and 15 per cent. had only a little discomfort. No anesthesia, local or general, was required in any case.

6. Dressings were entirely removed in from ten to fourteen days.

Conclusions.

The method which we have described is strongly recommended. Our results in a large number of cases of paronychia lead us to the following conclusions:

1. The method is painless and requires no anesthesia.
2. The technique is simple.
3. It shortens the period of illness, and is therefore of great value from an economic standpoint.
4. It restores the parts to normal, and is therefore important from a cosmetic standpoint.

The Peach Tree.—Of the making of cures for tuberculosis there is no end. The latest comes from Japan. Dr. Genzarubo Koga has, it seems, been investigating the matter for over ten years, and has arrived at the conclusion that beneficent Nature has, in the leaves of the peach tree (*Amygdalis Persica* or *Persica vulgaris*), provided us with a specific against Koch's bacillus beside which all the hitherto vaunted vaccines and serums pale into insignificance. The active principle of peach leaves is believed to be hydrocyanic acid, and it is interesting to recall that Koch himself stated in 1890 that potassium aurocyanide in large dilutions had a very deadly effect on the bacillus *in vitro*, but not *in vivo*. It may easily be that Dr. Koga has hit upon a useful therapeutic agent. The peach was introduced into Europe from Persia, and reached England about 1562. It does not so far seem to have been used in medicine.—*Med. Press and Events.*

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Rhinology, Laryngology and Otology: Geoffrey Boyd, Gilbert Royce.

Gynecology: F. W. Marlow, W. B. Hendry.

Genito-Urinary Surgery: T. B. Richardson, W. Warner Jones.

Anesthetics: Samuel Johnston.

GEORGE ELLIOTT, MANAGING EDITOR.

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COMMENT FROM MONTH TO MONTH

The First Year of the War Has Passed. Preventive medicine has scored a distinct triumph. As Mr. Tennant, the Under Secretary for War, has stated—there has been nothing like it before.

That up to July 1st, 1915, not as many as one thousand cases of typhoid fever had occurred in the British Expeditionary Forces is, along with all the sanitary precautions to keep the soldiers fit to fight, one of the outstanding features of the campaign in the West at all events. Five-eighths of the total cases were amongst the uninoculated, whilst the deaths were as five to one in the uninoculated as compared with the inoculated.

To show what armies had to cope with in former wars, some statistics may prove interesting. In the China-Japanese war of 1894, there occurred 150,000 cases of dysentery, and of that number some 38,000 died. Thus did the Japanese have their eyes opened to the necessity of preventive medicine, military hygiene and sanitary science in time of war. With that horrible experience behind them, they went into the Russo-Japanese campaign fully equipped and determined to wage war against the bacilli, whilst they sent their bullets after the enemy. They effectually reduced the incidence of disease in their army to the lowest point ever

known and paved the way for the greater triumphs of the present gigantic conflict.

The figures in connection with typhoid in South Africa have often been quoted. There were nearly 58,000 cases of typhoid with 8,022 deaths. In fact more died from typhoid alone than fell in the legitimate way in warfare by the bullets of the enemy. Eight thousand were killed in that way. Nineteen thousand soldiers were invalided home from South Africa as a result of typhoid. Thus the army lost through this one hidden enemy, the typhoid bacillus, 27,000 men.

In the Spanish-American war the United States sent into Cuba something like 117,000 non-commissioned officers and men. One-fifth of them fell ill of typhoid and 1,600 died.

Typhoid fever has been the bane of armies since the middle of the nineteenth century, but Sir Almroth Wright's discovery bids fair to banish it almost completely.

In this connection the most recent report from the Surgeon-General's office at Washington, published in the Journal American Medical Association, August 7th, gives striking figures of the efficiency of typhoid inoculation. Typhoid inoculation was made compulsory in the U. S. Army in September, 1911. By the end of the first quarter of 1912 practically all the U. S. army, in various parts of the world, were inoculated—an army numbering 92,000, and which had on the average about 350 cases of typhoid a year. In 1912, there were 27 cases of typhoid; in 1913, four cases; in 1914, seven cases; first half of 1915, one case. Only in two instances of the eleven cases, in 1913 and 1914, had the complete course of vaccination been administered. The complete course consists of three inoculations; and vaccination against smallpox is performed at the time the first dose of vaccination against typhoid is given.

This measure is now in use in the armies of Great Britain, France, Germany and Austria, and is probably being used to a certain extent in the armies of Russia and Italy.

An interesting item appeared in the *Medical Officer* the other day. It was to the effect that the Medical Officer of Health of Bristol, England, had recently vaccinated against smallpox the originator of the Anti-Vaccination Society.

It is unfortunate that vaccination is applied to inoculation against typhoid, as, in the lay mind, the two may become confused.

When the great war becomes cleaned up, there will be other triumphs for preventive medicine.

Editorial Notes

A NEW THEORY OF THE CAUSE OF ENTEROSTASIS

Intestinal stasis has been much before the medical profession and the public during recent years, owing largely to the very active propagation of his views by Sir Arbuthnot Lane and his followers. Both in Great Britain and in this country, however, a large number of medical practitioners have dissented from Lane's theory of the cause of intestinal stasis, some partly and others wholly, and the question has been made one for vehement discussion. A new view of intestinal stasis has been lately put forward by Dr. Arthur Keith, Conservator of the Museum of the Royal College of Surgeons, England, who took as his subject for the Cavendish lecture which he delivered this year a new theory of the causation of what he terms enterostasis (*West London Medical Journal*, July, 1915).

In this lecture Keith first pointed out the extent to which our knowledge of the living human body had been revolutionized by the discovery and application of the Roentgen rays. He found that an account published four years ago by L. R. Müller on the innervation of the bowel states definitely that the myenteric plexus differs from a true nerve plexus both in structure and in staining reaction. He therefore adopted the working hypothesis that the myenteric plexus represents a nodal and conducting system. He says that, if he is right in presuming that the myenteric plexus represents in the intestine a system which corresponds to the nodal and conducting system of the heart, then it is also to be expected that both systems should be developed in a corresponding manner. The other parts of the alimentary canal where peristaltic movements are known to arise were examined carefully without results, and then the various sphincteric regions of the alimentary tract were examined and the conclusion was reached that there was such a nodal center at the gastroesophageal junction of the mammalian stomach.

When Keith's search for a nodal system along the alimentary canal had reached an encouraging stage he visited Dr. W. B. Cannon in his laboratory at Harvard University, who told him that Alvarez had lately discovered that the commencement of the second part of the duodenum dominated the rhythm for the whole

duodenal loop. When the duodenal loop was cut out in segments and each segment kept alive in Locke's solution the rhythm or beat was fastest in the segment from the commencement of the second part and slowest in the segment from the end of the loop. On Keith's theory the upper segment had the greater amount of nodal tissue and was therefore the pacemaker of the duodenal rhythm. Alvarez found that the first segment of the jejunum had a slightly higher or faster rhythm than the last part of the duodenum, but that from the first part of the jejunum to almost the last part of the ileum the rate of rhythm decreased. At the last part of the ileum, if a piece of the ileocecal junction were left attached to it, the rate actually increased; but only if the ileocecal junction were left attached. This was explicable if Keith was right in regarding the ileocecal collar as a nodal center, as a pacemaker for the cecum and ascending colon.

Keith does not think either mechanical conditions or even derangements of sphincteric mechanisms can give an adequate explanation of all the phenomena of enterostasis. But when we transfer from the heart to the alimentary tract not only the anatomical and physiological data relating to its nodal and conducting system, but also our knowledge of cardiac pathology of heart block, or auricular fibrillation, of extra systole, and of delay in conduction, we seem to reach a more rational explanation of the motor derangements of the alimentary tract.

Keith does not agree with Lane in his explanation of enterostasis as the "drag, band, and kink" theory. In the first place Keith brings into the foreground the musculature of the alimentary tract, which is recognized as the sole propelling power in the intestinal wall. In Lane's theory a defect in the musculature of the bowel takes a very minor part in the causation of stasis. Further, Keith is of the opinion that his theory is the more in harmony with the appearances observed by clinicians and pathologists, and because it rests on a better basis of anatomical and physiological fact, he believes it will finally be accepted. *Medical Record.*

CALCIUM IN PHTHISIS

An interesting clinical report on the use of calcium chloride in the treatment of tuberculosis, by Dr. Thomas Beasley, of Indianapolis, Indiana, appeared in the January, 1915, issue of *Indianapolis Medical Journal.*

Calcium chloride solutions, writes Dr. Beasley, have not been found incompatible with the physiological functions of the human economy; on the contrary, the calcium salts have a peculiarly selective inhibitory effect upon the tubercle bacilli in living tissue. Dr. Beasley has had under observation 486 patients in various stages of phthisis upon which treatment with the calcium salts was used, the method of administration being by intravenous injection. None of these cases were engaged in occupations where calcium might have been absorbed directly. He also experimented with rabbits, using the iodide and chloride of calcium intravenously successfully; the best results apparently being obtained from the chloride.

The treatment can be adopted in any stage of the disease. The doses in some cases reached 15 grains, beginning in every case with two grains, and repeating each fifth day to the number of five injections. The apparatus used was the ordinary Leur 20 c.c. syringe. The dose of calcium is given dissolved in 20 c.c. of freshly distilled water at a temperature of 103 F. which should be maintained throughout the procedure. The area of injection should be thoroughly sterilized before the operation and no dressing used afterwards. Stress is laid upon the avoidance of infiltration of the surrounding tissues, otherwise sloughing may occur.

After each five injections two weeks should intervene before the second series of five, and this should be continued for two or three months after tubercular manifestations have disappeared.

The author of this method of treatment cautiously states that within the last five months six patients so treated for phthisis have been dismissed as apparently cured, but that they will be kept under observation for the purpose of further study.—*American Medicine.*

POISONS IN WARFARE

The foul, if clever, recourse of the Germans to the use of poisonous gases in the field and in explosive tubes are well illustrated in a book just issued, written by a chemist and entitled "The Poison War." We have here a fair amount of elementary chemistry and toxicology which will not be fresh matter to our readers, and an interesting account of the chemistry of modern explosives, their manufacture, and the materials on which their foundation is based, which will be new to most of them. Also certain facts are brought to light which show how completely the Germans have ignored

the agreements which they have signed as to excluding certain devices in warfare. "The perfidious dual rôle by Germany for years past during international discussions upon the customs of civilized warfare will be better appreciated," Mr. Roberts writes, "if I say that the bulk of the Teutonic poison shells recently recovered by the French bear the date 1911 and that the poison-gas asphyxiating apparatus (described in this book) was under German military consideration in the year 1909." The last Hague Conference was held in 1907. German shell and shrapnel are described as containing considerable quantities of phosphorus. The plea has been put forward that phosphorus was used for illuminating purposes, and thus the better to ascertain the enemy's position, but unfortunately for this excuse these shells have been fired in thousands during broad daylight. The writer has evidently been in close touch with these new war devices, for he describes the incendiary pastilles, Zeppelin bombs, thermit, and so forth, in terms which show that he has actually handled these infernal machines. With regard to Zeppelin and flying-machine bombs he thinks much remains to be accomplished in the way of research and invention. The chief problem appears to be the accurate dropping of bombs, which in the present state of our knowledge have to be light in weight, with a minimum of danger to the machine's crew. On the whole, the view is favored that these difficulties might conceivably be overcome by using wide-spreading poison instead of fire or explosives. It is doubtful whether air attacks have been so far a real menace to our insular position, but we have to reckon with an enemy absolutely unscrupulous in his methods and stopping at nothing that is contrary to all humane dictates. Finally, warfare conducted by poisonous shrapnel, gases, explosives, and bombs opens up fresh considerations for medical treatment.—*The Lancet.*

News Items

Dr. John R. Irwin, Cobourg, Ont., has left to join the R.A.M.C.

Orillia, Ont., is giving three motor ambulances, built in Orillia, and manned by Orillians.

Eighteen Toronto physicians have applied for admission to the provisional school for medical officers to be held at Camp Niagara.

The plans for the new hospital at Amherst, N.S., were prepared by a German interned in the Detention Camp at that place.

Dr. James L. Wilson, of 1557 Bloor Street West, Toronto, who enlisted with the Imperial Army Service Corps, arrived in England on August 3.

Dr. John R. Whitman, Brantford, has left for Montreal, having secured a commission with the third university overseas contingent.

Captain James Henderson, M.D., Toronto, who has been practising in Regina, after serving in the South African War, has become attached to the R.A.M.C.

The Grand Lodge of the I. O. O. F. has voted $1,000 for an Oddfellows' Ward in the Ontario Government Hospital, being established by Hon. Dr. Pyne in England.

Dr. Alf. Haywood, Assistant Superintendent, Toronto General Hospital, who has recently been operated upon for appendicitis in London, sailed for Toronto on the 20th of August.

Stratford, Aug. 16.—The machine gun campaign got a neat start to-night when the City Council at its regular session received an offer from Drs. J. A. and Lorne Robertson, prominent local physicians, to issue a cheque for $1,000 at the Council's call to purchase a machine gun for Perth county soldiers. The offer was referred to the Finance Committee, with the Council's thanks, and will undoubtedly be accepted.

Dr. D. A. Volume, of Erskine, Alberta, visiting at his home in Kingston, is going to England, having received an appointment with the Royal Army Medical Corps.

Kingston, August 13. Queen's stationary hospital, which left England on August 1, reached Alexandria, Egypt, yesterday morning, according to a cable received here. There are about 200 in the hospital unit, which is commanded by Lieut.-Col. F. Etherington.

The Canadian Red Cross Society has received an offer to take the Canadian wounded when they have sufficiently recovered to Norway free of expenses, and there provide them fishing. The society has found it impossible to accept.

London, Aug. 19.—Under a statute relating to the Faculty of Medicine, the Province of Ontario is declared, by Order-in-Council, to be a separate British possession, to which the second part of the Medical Act of 1886 shall be applicable.

A handsome bronze memorial tablet has been placed on the large commercial building at St. Paul and St. Sulpice Streets, Montreal, to commemorate the fact that on that site stood the first building of the Hotel Dieu Hospital, founded by Jeanne Mance in 1644.

The Academy of Medicine, through its Council, urges the necessity of immediate provision for wounded Canadians who will be returned to Canada in the near future. The Ontario Government is considering opening the Whitby Hospital for the Insane for this purpose, with perhaps a clearing station in Toronto.

A German, with headquarters in Winnipeg, was found guilty of practising medicine in Saskatchewan without being a licensed practitioner, in Police Court recently. He was sentenced to two months' imprisonment, with the option of paying fines and costs amounting to $186.70.

Saskatchewan government has promised a delegation of doctors representing the College of Physicians and Surgeons of Saskatchewan $10,000 to help defray the cost of a stationary field hospital for war service. The doctors themselves have pledged $10,000, and $20,000 will be asked from various organizations. It is intended to send a 200-bed hospital fully equipped and manned.

According to cables just received, Dr. Ella Scarlett-Synge, of Vancouver, organizer of the Women's Volunteer Reserve, has arrived in London on her way to Serbia, where she will carry out hygienic reforms in military camps under the auspices of the Red Cross Society. While in London Dr. Scarlett-Synge stated that it was her hope that the Women's Volunteer Reserve movement would spread rapidly throughout Canada. She said that Mrs. Brown was in charge of the interests of the Montreal unit.

After looking over several sites for the Ontario Government hospital, Colonel Hon. Dr. Pyne has chosen Orphington, in Kent, distant from London 15 miles, and a short distance from Dover and Folkestone.

The hospital will contain 1,040 beds. Half may be used for convalescent patients and those suffering from shock, and half for acute cases, or all for acute cases, depending on the necessity that may arise. The hospital is now under way and will be completed without delay.

Surgeon-General Jones authorizes the Canadian Associated Press to state that all three Canadian hospital units bound for the Dardanelles have arrived in safety. No Canadians were on the Royal Edward, and the rumors of the reported loss of some Canadian nurses are groundless. The three units referred to are No. 1 Stationary Hospital, in charge of Col. McKee; No. 3 Stationary Hospital, Col. Casgrain, and No. 5 Stationary Hospital, at Cairo, Col. Etherington.

The Stationary Hospital offered by Laval University has been accepted by the War Office and the organization of the unit will be begun at once. Col. E. W. Wilson, O.C. of the 4th District, wrote to Dr. E. P. Lachapelle, Dean of the Faculty of Medicine at Laval, recently, notifying him that the War Office had accepted the hospital.

The establishment calls for twelve officers, twenty-six nurses, 108 privates, and fourteen other ranks. The hospital will have just half the accommodation of a general hospital, 520 beds.

A continual stream of reinforcements for the Canadian Army Medical Corps must be maintained, officials say. Although the casualties in this branch of the service have not been heavy, the demands on them are many and more men are continually needed for the new hospitals which are being organized in France. Recruits will be accepted at the Craig Street Armories.

Reviews

The Development of the Human Body. A Manual of Human Embryology. By J. Playfair McMurrich, A.M., Ph.D., LL.D., Professor of Anatomy in the University of Toronto; Formerly Professor of Anatomy in the University of Michigan. Fifth Edition, revised and enlarged. With two hundred and eighty-seven illustrations, several of which are printed in colours. Philadelphia: P. Blakiston's Son & Co.

In the last few years there has been manifested increased interest in human and mammalian embryology. Thus, increased knowledge thereby has necessitated the issuing of a new edition of this excellent book for students. Without adding to the size of the book, the new knowledge has been incorporated and the old text completely revised. The book conveys an accurate account of the development of the human body.

Collected Papers from the Research Laboratory. Parke, Davis & Co., Detroit, Mich. Reprints. Volume 3. 1915.

The present volume is a collection of papers which have been published during 1914 in various American and foreign medical and pharmaceutical journals during the past year. There is also an index of the previous papers published. Our readers will find in these scientific papers much valuable up-to-date knowledge daily being accumulated by this laboratory.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume IV, Number III, (June, 1915). Octavo of 195 pages, 73 illustrations. Philadelphia and London: W. B. Saunders Company. 1915. Published bi-monthly. Price per year, paper, $8.00; cloth, $12.00. Canadian Agents, J. F. Hartz Company, Toronto.

There is in this volume a comprehensive discussion on diagnosis of injuries of the carpus; an incisive advocacy of immediate operation in appendicitis. W. J. Mayo talks on unsuccessful gastro-enterostomy for ulcer. Amongst other subjects dealt with are conditions of testicle, spermatic cord, kidney, malar bone, mandible. The volume runs from page 383 to page 577 and is fully and well illustrated.

A Manual of the Practice of Medicine. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania, Lecturer on Medicine in the University of Pennsylvania. Tenth edition, revised. 12 mo. of 629 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1915. Flexible leather, $2.50 net. Canadian Agents: J. F. Hartz Company, Toronto.

Reading some of the very concise articles in this well-known and excellent book for medical students, satisfies us that the book has been thoroughly revised and made up-to-date. There are some new chapters and old ones rewritten. This is a first-class book for the medical student to study to acquire a quick and general acquaintance of medical conditions. It does not aim to be anything but concise and practical.

The Care of the Baby. By J. P. Crozer Griffith, M.D., Professor of Diseases of Children in the University of Pennsylvania. Sixth edition, thoroughly revised. 12mo. of 463 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1915. Cloth, $1.50 net. Canadian Agents, J. F. Hartz Company, Toronto.

Six editions of this book speak louder than words. There have been added several new illustrations, old ones remodelled, and the text entirely reset. Medical students, nurses and practitioners will all find this book a valuable handbook on the care of the baby.

Primary Studies for Nurses: A Textbook for First Year Pupil Nurses. By Charlotte A. Aikens, formerly Superintendent of Columbia Hospital, Pittsburg, and of Iowa Methodist Hospital, Des Moines. Third edition, thoroughly revised. 12mo. of 471 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1915. Cloth, $1.75 net. Canadian Agents, J. F. Hartz Company, Toronto.

Perusal of the present edition of this splendid manual for nurses exhibits an introduction of new matter and careful revision of the old. Prominent amongst the new material is a chapter on "Notes on Surgical Anatomy." There are five hundred questions for self-examination and review.

Publisher's Department

Dr. Marchiafava on the Sobriety of Italy's Soldiers.—One of our Italian correspondents writes on July 15th: To lie without deceiving, according to the French diplomatist, is one of those blunders which are worse than crimes, and the recent phases of Austro-German policy are rich in confirmation of the aphorism. The official press of the Dual Monarchy furnishes the latest instance in point—the "Correspondenz Bureau" committing itself to the assertion that drunkenness is a vice of the Italian soldier, impelling him to "methods of barbarism" such as mutilating the dead and killing the dying on the stricken field. The calumny—for such it is—has, like its analogue, the poisoned gas, recoiled on its disseminators and brought into lurid relief the atrocities of the Austro-German linesmen, atrocities substantiated by an impartial commission, atrocities, moreover, committed in cold blood without the plea of drunkenness to account for them. The Senator, Dr. Marchiafava—well known as a veteran clinician in the Roman school and as "Consultant Extraordinary" at the Vatican—has found time to reply to the Austrian accusation, and in an interesting paper to prove by statistics, recent as well as remote, that neither intemperance nor alcoholism has ever been a vice of the Italian soldier, and that, if it prevailed in the armies of the later, or the lower, Empire, it was all but entirely confined to the northern or non-Italian divisions of the Imperial forces. It is, indeed, to come to recent times, a commonplace in the history of the Napoleonic campaigns, that of all the contingents of the *Grande Armée* the Italian was singularly free from the vice of intoxication, Baron Larrey, surgeon-general of the said army, setting forth in his memorable report that the 10,000 Neapolitans under Murat were at once the most temperate, and, in a military sense, the most effective, of all Napoleon's troops in his disastrous retreat from Moscow. That honourable record was maintained by the Italian Expeditionary Force under La Marmora in the Crimea (1854-5), and, not only in Abyssinia and Libya was the national sobriety conspicuous both in camp and quarters, but, in the day now passing, Dr. Marchiafava can adduce evidence from correspondents, medical and combatant, at the front and in the fighting-line, that abuse of alcohol is unknown. "We are always," writes one of these officers to him, "in Austrian territory at an altitude of 1,800 metres above

Medical Council of Canada

OCTOBER EXAMINATIONS, 1915

The examinations of the Medical Council of Canada will be held in Montreal and Halifax coincidently on October 12th, 1915.

Forms of certificate may be obtained from the Registrar at any time.

Registration for the October examination will close promptly at the Registrar's office in Ottawa on September 14th, 1915.

R. W. POWELL, M.D., Registrar
180 COOPER ST., OTTAWA

sea-level enjoying the purest air, though it rains every day and we are often shrouded in mist. But when the sky is clear, how enchanting the view! Our cuisine is 'hygienic,' and we are fortunate in having, quite near us, a fine spring of water, limpid, fresh, and sparkling, imbibed by us officers and our men with pure delight." Not a word of wine, remarks Dr. Marchiafava, while his correspondent refers to coffee and tea as the beverage between meals. The formations known as the Alpini, which have acquitted themselves so brilliantly in carrying position after position on precipitous ground, are abstainers in the strictest sense, their officers sharing the precept and practice of the army medical explorer, Dr. Filippo De Filippi in the expeditions in Alaska, Monte S. Elia, and Karakoram led by the Duke of the Abruzzi, whose experience was that alcohol was systematically ignored, not only as, in the last resort, mischievous, but, even temporarily, positively distasteful. On every ground, therefore, of individual conviction and of daily practice, the Italian soldier is no lover of strong drink, finding, as Dr. Marchiafava puts on record, that "a good cup of coffee, taken in the morning or even in the afternoon, is the best of stimulants"—bracing him to those feats of daring which have redounded to his honour, whether on the Julian Alps or in the Istrian Triangle.—*The Lancet.*

The Effects of Asphyxiating Gases.—R. Dujarric de la Rivière and J. Leclercq, owing to their favorable situation at Calais, were able recently to examine 112 soldiers injured by asphyxiating bombs at Langemarck. In *Presse médicale* for July 15, 1915, they present a paper on this subject, which may be summarized as follows: The gases used were mainly bromides and chlorides and the principal phenomena noted were bronchial or pneumonic, although hepatic or renal symptoms were not infrequent and occasionally dominated the clinical picture. A few cases were of slight importance, but the majority presented pulmonary symptoms of great gravity, bronchopneumonia, pneumonia and pulmonary gangrene, which the observers were able to follow in its entire evolution. Two patients presented cases of hemolytic jaundice and a third had for several days hemoglobin in the urine. The urine of the majority of patients was highly colored and contained abundant biliary pigment. Albuminuria of a persistent nature characterized a few cases. Histochemical and bacteriological study of the expectoration showed the pulmonary manifestations to begin

with a discharge of desquamative debris and a few polynuclears, a picture soon modified into one of congestion and occasionally necrosis of the lung. At first the bacterial flora was insignificant, but the sputum sometimes contained anaerobes, particularly Bacillus perfringens. When gangrene supervened, anaerobes became abundant. An autopsy on a subject dead of pneumonia corroborated the findings of both clinic and laboratory.

In the same issue of *Presse médicale*, Fernand Levy writes of the respiratory syndrome which follows inspiration of the asphyxiating gases. The first victim he examined, twenty-four hours after exposure, had been obliged to retire after an attack of burning in the throat, lacrymation, headache, apnea, and vomiting. He could hardly stand erect, the face was cyanosed, the lips were violet, and he coughed constantly, emitting a sputum streaked slightly with blood. From time to time he vomited; the axillary temperature was 101.3° F., the pulse weak and almost imperceptible at 145. Examination of the thorax disclosed an intense tachypnea; percussion showed no diminution of resonance, but auscultation revealed all over the lungs subcrepitant sounds, well nigh drowned in bronchial sibilance and sonorous rales. This man, who was lost sight of, is supposed to have succumbed within twenty-four hours. Other patients showed, beside the symptoms already given, a heavily coated tongue, a dyspnea closely resembling that of uremia, a pulse of about 100, slight hemoptysis, vomiting, constipation, subicteroid symptoms, anuria, sometimes hematuria, and transient albuminuria. In autopsies on two Canadian soldiers, dead from asphyxia, the lesions were those of acute bronchitis and pulmonary edema; spectroscopic examination of the blood showed absence of all pigment. In Levy's opinion the gas used was undoubtedly chlorine. Within forty-eight hours the French soldiers were provided with a mask of several layers of gauze impregnated with a glycerinated solution of sodium hypophosphite; at the first sign of an attack they were to wet this mask with water and adjust it over the face.—*N. Y. M. J.*

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Original Articles

THE TREATMENT OF ECLAMPSIA*

METHODS USED AT THE TORONTO WESTERN HOSPITAL OBSTETRICAL DEPARTMENT. EIGHT CONSECUTIVE CASES WITHOUT MATERNAL DEATH.

BY GORDON G. COPELAND, B.A., M.B.,
Assistant Obstetrical Surgeon to the Toronto Western Hospital.

Mr. Chairman, Ladies and Gentlemen:—

Eclampsia is such a serious disease, and its manifestations are often so sudden and appalling, that I feel a very short review of some of the outstanding features of this pathological condition, and of its rational treatment from a practical standpoint, may be of service.

May I briefly mention some of the salient points about the disease that will help us to better understand the principles of treatment?

Definition.—Eclampsia is an acute toxemia occurring in pregnant, parturient and puerperal women. Jardine says it may also occur in the new-born children of these women.

The disease is generally manifested by tonic and clonic convulsions with loss of consciousness, frequently followed by coma. Convulsions are not always present.

Frequency.—It occurs in about 1 per cent. of women entering lying-in hospitals, but is subject to wide variations in different years, and in different institutions.

It is more frequent during the cold, changeable weather, and, to a certain extent, follows the incidence of acute nephritis due to climatic conditions. I might venture to suggest that certain epidemic diseases affecting the kidneys, such as scarlet

* Read before the Section on Gynecology and Obstetrics at the Annual Meeting of the Ontario Medical Association at Peterborough, Ontario.

fever, may affect a large number of girls at the same time and injure their kidneys. Years later when these girls marry and become pregnant, they form a group that is more easily affected by the toxemias of pregnancy, and thus give rise to a wave of eclampsia.

Most cases of eclampsia are in primiparae, 80% according to large statistics (Jellett). All the cases I have had in the Western Hospital have been among primiparae. The last three months of pregnancy have the largest number of cases. The disease increases in frequency the nearer term is approached.

Mortality.—Taking the country as a whole, about 25% of the women die. The fetal death rate is very high. It goes over 50%. In our series, in all the cases that had convulsions before admittance to the hospital the fetuses were already dead when the women came under our care. In the post-partum case the child was saved and showed no evidence of the disease.

Etiology.—This condition has been called the "Disease of Theories." I have no knowledge of the chemical composition of the poison which we suppose exists. May I mention in passing a few of the theories that have held sway from time to time.

Predisposing causes are to be found in acute and chronic nephritis, in primiparity, a neurotic temperament, in the long retention of waste products, excessive size of the uterus from hydramnios or multiple pregnancy, or obstructed delivery (Jellett).

Frerich's urea theory, the uremic theory, the auto-intoxication, the infectious theory, the neurotic, the ovular, the anaphylactic and thyroid theories, all have their exponents and opponents. It seems to me that the poison is elaborated in the placenta and gets into the blood stream easily, and is carried throughout the body, affecting the liver, kidneys, brain and heart especially, and in proportion to the concentration of the poison and the ability of the different organs to deal with the toxin. I think that there is a specific eclampsia poison, or group of poisons, probably of protein composition. It is probably a colloid, hence is not readily removed from the circulation by purgation. This may even be produced in a normal pregnancy, but be eliminated, with a minimum of damage, owing to the integrity of the organs dealing with it, and their continual efficient functioning. This real, though unidentified poison does not always give rise to eclampsia, as you know, for

we have the pre-eclamptic condition, which, if properly treated, will terminate in avoiding eclampsia. To my mind, the question of whether a woman having this poison circulating in her system will have eclampsia or not is a matter of the concentration of the toxin at any one time, and the flash-point, if I may use the term, of the particular individual affected.

The Pathology of the Disease.—The chief changes produced in the various organs are congestion, hemorrhage, degeneration, and necrosis. The liver, the kidneys, the brain and heart are the organs most vitally affected. I think that there are *two* distinct clinical types of the morbid process to be distinguished, and they depend upon the organ more affected.

The Liver Type of Eclampsia.—The patient is jaundiced, vomits, has a tendency to hemorrhages, changes in the urine are not marked, albumin is small in quantity, the blood pressure is not high, convulsions are not marked, coma is common, there is little if any edema, and the pulse is poor. These cases do badly. The post-mortem findings are pretty constant and the characteristic changes are to be seen in the liver. If death has been delayed a few days, the liver is frequently shrunken, the capsule wrinkled, and, on cross section, the liver looks a mottled red and yellow. It is very much like the liver of acute yellow atrophy and delayed chloroform poisoning, or phosphorus poisoning. I have seen cases where it was difficult to find any healthy liver tissue left, almost the whole of the parenchyma being destroyed. The lesions in the liver vary from granular and fatty degeneration, to actual necrosis. Cragin and Hull say, "This necrosis begins at the centre of the lobule, and extends toward the periphery, leaving only a mass of granular detritus surrounding the central vein, the nuclei and cell contents disappearing with only a reticular network in the place of the liver cells. Thromboses with hemorrhage occur throughout the lobule more often than at the periphery. The organ may be swollen or diminished in size, according to the change in the parenchyma. It usually shows a yellowish color and may have hemorrhages under the capsule." (Confirmed by Delafield and Pruden.)

The Kidney Type of Eclampsia.—This is characterized by (1) a high tension pulse, (2) severe headache and epigastric pain, (3) nervous symptoms are marked, (4) edema is generally present, (5) The urine is scanty, of high specific gravity, and contains a large quantity of albumin, blood casts, granular and

hyaline casts, and frequently free blood. On boiling, this urine frequently goes solid. The total nitrogen excreted is markedly diminished. These cases usually have severe convulsions. The post-mortem findings are naturally most marked in the kidneys. The kidneys are swollen, the cortex thickened, pale and congested, the markings less distinct, and the capsule not adherent. Microscopically, the cells of the cortical tubules are swollen, in many places disintegrating. The vessels are injected, and the tubules contain much granular material. (Cragin.) At other times there are areas of actual necrosis. In short, we have an acute toxic nephritis.

Eminent authorities claim that the liver lesions are characteristic of the disease (Williams, Jürgens, Klebs, Pilliet and Schmorl, etc.), on the other hand, equally famous men say the essential lesions are in the kidneys (Winkler, Knapp, etc.). I think that a fuller explanation is that both organs are affected and, when very unevenly so, that organ the more affected dominates the pathological picture, and presents a distinct type.

The brain may have edema, anemia, thrombosis, and necrosis. Degenerative changes also occur in the heart to an extent clinically detectable, and clearly marked post-mortem. The spleen, pancreas, and other organs are affected.

The causes of death are of interest in that they show what to avoid, where this is possible. Asphyxia, exhaustion, heart failure and shock, toxemia, edema of the lungs, septic aspiration pneumonia, anuria, cerebral hemorrhage and thrombosis, and edema of the brain, acute yellow atrophic and necrotic hepatitis, and acute nephritis.

Diagnosis.—Eclampsia has to be distinguished from phosphorus poisoning, which simulates the liver type of eclampsia, and convulsive poisons such as strychnine, from uremia, epilepsy, hysteria, malingering, etc. From a practical standpoint, however, there is rarely serious difficulty. If a pregnant woman comes into the hospital with a history of having had convulsions, and on catheterizing her, a small amount of urine is obtained which has a high specific gravity, albumin and blood, granular and hyaline casts, free blood, and there is edema of the tissues, a high blood pressure, coma, or jaundice, I make a working diagnosis of eclampsia and treat accordingly without delay.

Prognosis.—This should always be guarded. Stroganoff has the best records of a large series of cases, 6.6 per cent. in 400 cases. From that the mortality goes up to 66 per cent. Generally the greater the number of fits the poorer the outlook.

Eclampsia at the sixth month of pregnancy is usually more dangerous than at term.

The onset of jaundice nearly always indicates a fatal termination. A weak, fast pulse and anuria are very grave signs. Sudden and almost unexpected death after apparent improvement must not be forgotten. Only about 1 per cent. of cases recur, and there is usually a chronic nephritis underlying this.

The Treatment of Eclampsia.

Through the kindness of my chief, Dr. Albert A. Macdonald, the Associate Professor in Gynecology and Obstetrics, I have been given a free hand in the choice of methods used, and the opportunity to present this paper. From personal experience in such great international clinics as the Sloane Hospital for Women, New York, the Rotunda Hospital, Dublin, and others, I have chosen those methods which seemed to me to give the best results. We have now elaborated a plan of action to be used in the treatment of eclamptics at the Western Hospital, subject to such variations as are needed by individual cases. While each step has been used and commended highly by various authorities and heartily condemned by others, the technique we now follow is not generally adopted elsewhere to the exclusion of most other procedures. I contend that the treatment we use is as rational and scientific as our knowledge of the disease will allow.

To be generally and successfully carried out, a technique must be simple and the apparatus uncomplicated and cheap. We are training our house surgeons and students for actual possible practice. Therefore, while immediate vaginal section has given good results in selected cases in skilled hands under ideal conditions, this state of affairs occurs to but few. The intelligent country practitioner can carry out everything essential in our technique.

Just how far we may carry certain procedures, no matter how excellent in themselves, must ever be a matter for most careful judgment.

Prophylaxis.—"Prevention is better than cure." In a large number of cases, eclampsia may be prevented when the danger is known. "Forewarned, forearmed." The public should be educated to take preventive measures against disease. The day will soon be here, I trust, when the life of a woman or child will be considered of greater value than that of a hog. Most of the accidents and preventable diseases associated with

child-bearing can be forestalled by simple investigations honestly carried out during the course of gestation. I should earnestly plead with the profession as a whole for greater care to be taken of pregnant women. A few dollars spent in monthly examinations, especially of the urine, and the blood pressure if need be, would prevent many terrible accidents.

A pregnant woman who has daily efficient bowel movements, who passes over 50 ounces of urine of normal specific gravity, who drinks a sufficient volume of water, who perspires moderately, has a daily bath, is without headaches, dimness of vision, who eats rationally, exercises in reason, has a normal blood pressure, whose urine has no albumin or casts, will certainly not have any eclampsia.

On the other hand, a pregnant woman who is greatly constipated, passes a high-colored urine, with albumin in it, has a high blood pressure, headaches, dimness of vision, epigastric pain, and vomiting, is very likely to have eclampsia. This woman should be put on a purin free diet, well purged, and plenty of fluids got into her and her skin got acting. If in spite of this the condition persists, have a consultation, and induce labor without shock or trauma.

Actual Technique of Treatment.

There is a logical reason for the order we follow. We try to control the fits as soon as possible, without adding further damage to the poisoned organs.

(1) Give one-half a grain of morphine sulphate, hypodermically, and repeat, using one-quarter grain as soon as necessary. Do not give chloroform; it increases the damage without doing any good except to ease the feelings of the onlookers. It has been definitely settled that the convulsion *per se* is only a severe effect; the cause is the high blood pressure where it exists, and the toxic condition of the nervous system. The morphia depresses the nervous system and decreases metabolism and relieves the heart. Its one bad effect, that of retarding the breathing, can be overcome by plenty of fresh air or inhalations of oxygen. The latter is good, for there is always a decreased oxydation in eclampsia.

(2) Prevent the patient from injuring herself; have a sheet tied over her, so she cannot spring out of bed. In a fit, place a rolled handkerchief between the teeth to prevent the tongue being bitten, and turn the patient on her side to prevent

the aspiration of vomitus, infected secretions, etc., that might easily give rise to an aspiration pneumonia.

(3) Remembering constantly that eclamptic women are very easily infected, and taking every precaution to avoid sepsis, give 1,000 c.c. of normal saline at 100 Fah. under the breasts, not into them. The sterile normal saline, being a very stable salt solution, is not likely to add to the sodium concentration present in eclampsia. I have the area into which the needle is to be injected painted with tincture of iodine, 2½ per cent. iodine in ethyl alcohol. This hypodermoclysis is of the utmost value in diluting the toxins and preventing thrombosis and inducing diuresis. Jardine, of Glasgow, has had very fine results with it. He adds sodium acetate. Williams and De Lee are very favorable to it.

(4) Withdraw a quantity of blood by aspiration of a vein, under antiseptic and aseptic precautions, or do a venesection. This directly lowers the blood pressure and removes a definite amount of the eclamptic toxin which is causing the convulsions and the high blood pressure. The amount of blood to be withdrawn is a matter of good judgment. A big, plethoric woman who is cyanosed can stand the withdrawal of 20 to 30 ounces easily, with the greatest benefit; the volume of the blood is replaced by the saline. In an anemic, emaciated woman, with low blood pressure, the abstraction of five or ten ounces of blood does good. The underlying principle of removing an inorganic poison from the stomach in poisoning is just the same. There may be considerable difficulty in getting any blood, for the tendency for the blood to clot is very great. Cases where it is at first impossible to get any blood from a vein, after the lapse of a couple of hours, become easier, because the blood is diluted by the saline. In one case I shall quote later, that of post-partum eclampsia, the withdrawal of twenty ounces of blood had a most dramatic effect. I have never seen a case of eclampsia where definite good was not accomplished by the withdrawal of blood. I have never seen a case of eclampsia followed by post-partum hemorrhage. Most of the recent works strongly recommend blood letting (Williams, De Lee).

(5) Empty the uterus. Carefully examine vaginally to ascertain the condition of the cervix. If it is soft and will admit three fingers, get the woman prepared for instrumental delivery. Give a general anesthetic. Nitrous oxide and oxygen are the best, then comes ether. The cervix can now be

carefully dilated with the gloved fingers to full dilatation and forceps carefully applied, using axis traction if possible. If the child is dead, and it very frequently is in hospital practice, do not hesitate to do a craniotomy if the head is large or the outlet small.

In case the cervix is rigid and small, use a good type of hydrostatic bags. In my opinion they are by far the safest and surest means of dilating the cervix without trauma or shock, and they imitate Nature's bag of waters. The cervix can be opened by a Goodell dilator enough to admit one finger, and then put in number one Voorhees' bag and dilate. As soon as this comes through, replace by number two. I sometimes use traction of two or three pounds to hasten the dilatation. Frequently, when number two has come through, the cervix can be further dilated manually. Don't be in too great a hurry. Avoid trauma and shock. If more than a couple of hours have elapsed since the first convulsion, the matter of taking a few hours extra to gradually dilate and carefully deliver will not only do no harm, but be productive of good. (Confirmed by Bumm's statistics.)

(6) Eliminations. (A) By the Intestinal Tract.—Give several enemas. When the bowel is unloaded, give a large enema of magnesium sulphate, two ounces dissolved in a small quantity of water. An enema I have given frequently is called a one-two-three—one part glycerine, two parts magnesium sulphate, and three parts water. This is usually effectual. Having cleared the bowel, start giving tap water, about 110 Fah. Saline is not necessary. If possible wash out the stomach and put down two ounces of magnesium sulphate. This is by far the best purgative, as it gets rid of a large volume of fluid, and any of the magnesium absorbed helps to calm the nervous system without the dangers attending the intravenous injection of magnesium sulphate, which has met with some success in controlling the convulsions in eclampsia as in tetanus. There is some danger, however, of respiratory failure in this latter procedure. Croton oil should not be given to a weakened patient, as it is very depressing and may turn the tide against her.

(B) By the Kidneys and Skin.—Hot packs and stupes are of the greatest service in overcoming the spasm of the superficial bloodvessels and thus lowering blood pressure. They calm the nervous system and help in an indirect way to induce diuresis by relieving the spasm of the renal vessels. Do not be misled as to the value of hot packs. Directly

they do not remove any more of the eclampsia poison than they would strychnine taken by mouth. Hot packs and baths can easily be overdone and the patient exhausted. A profuse sweating after a hot pack is a favorable sign that the body is reacting. It usually means that the kidneys are being relieved at the same time.

Complete anuria is, of course, a very grave sign. If the condition persists more than twenty-four hours in spite of all these measures, the patient is very likely to die. I think that when all these measures have been carefully tried for the twenty-four hours without success, the only hope is in decapsulization of one or both kidneys, as practised by Edebohls. An acute toxic nephritis is present, and the kidney capsule being relatively inelastic, and the kidney being engorged with blood to the extent of shutting off the circulation even, then only operative measures are likely to give any relief.

Short of this desperate condition, I think hot stupes to the loins and cupping are of as much service as in acute nephritis.

I do not give veratrum viride, as it only adds another poison and is dangerous if potent. Except in large hospitals, however, it is likely to be inert. It does only harm in those cases of low blood pressure. All the good claimed for it can be obtained in other ways, as I have shown. It is now being condemned. (De Lee.)

Do not give pilocarpine. It is very likely to lead to an acute edema of the lungs, and the sweat it gives is frequently the death sweat.

Accouchement force is a device worthy of the highest praise of Prussian Kultur. The tearing apart of a rigid cervix by the rapid stretching of a Bossi dilator, with the certain prospect of grave injury to the woman and severe shock, if not of speedy death, is most reprehensible.

If there is evidence of dystochia due to the bony parts of the mother being too small or the child too large, if still living, an abdominal Cesarean section is indicated. By using proper protection (such as Halbertsma did not), nerve blocking, etc., after the manner of Crile's anoci-association) the patient can go through the laparotomy with very little shock. Always remember that delivery is not a certain guarantee that the convulsions will stop. Dührssen and Braun claim most convulsions cease after delivery, if this is effected immediately after the first convulsion. Nearly twenty per cent of eclampsia occurs

post-partum. (Williams). Where the convulsions continue after delivery, do not hesitate to bleed the patient.

Where the patient has been catheterized or had internal examinations, I give ten grains of hexamethyline tetramine three times a day, dissolved in plenty of water.

(7) *Ice Cap to Head.*—High temperatures are very grave in eclampsia. I have had an ice cap applied to the head in several cases with apparently good results. It calms the nervous system appreciably.

In cases of great depression, where the circulatory system needs stimulation, I think that the aromatic spirits of ammonia and atropin are good.

I have not tried hirudin (leech extract) as recommended by Dienst, but it does not sound good, for it does not remove the cause.

To recapitulate, use morphia, subcutaneous injection of saline, withdrawal of blood, the use of hot packs, the induction of labor and delivery without shock, the emptying of the gastro-intestinal tract followed by purgation, ice cap to the head, and quiet, are means at our disposal which give the best results in eclampsia.

Case Histories.—I shall only give you partial accounts of three cases. They will serve to show, not a perfect technique, but a gradual improvement with very certain and gratifying results.

(1) Mrs. Annie G., age 19, Scotch, primipara, six months pregnant. Had had several convulsions outside before admittance to Toronto Western Hospital. Patient is a strong young woman of about 125 pounds weight. When first seen, at 4 p.m., she was in coma which alternated with the most violent convulsions, needing three persons to control her. She was given a small amount of chloroform until she could be got under the control of morphia. Her blood pressure was S 140 and D 90. A catheter specimen of urine showed a high specific gravity, loads of albumin, granular and blood casts. Her people said that she had had severe headaches and vomiting. As soon as I could get her sufficiently quiet, I tried to get some blood from the veins of the right arm. The blood was so thick that it would not pull through a large needle. I then cut the median basilic vein across, but there was only a little oozing, and clotting occurred at once. I then tried the other side without success. Then I tried to get some blood out of the jugular vein, but again the blood was so thick that I was unable to withdraw

it through a large needle, so I desisted from further attempts to get any blood, and gave 1,000 c.c. of sterile normal saline under the breasts. The convulsions ceased, and I gave one-quarter of a grain of morphine sulphate. One minim of croton oil had been given by the house surgeon before my arrival. A hot pack was given for thirty minutes, and enemas were more or less successful. At 8 p.m. Dr. McPherson, the house surgeon, was able to get four ounces of blood from the left arm. The blood clotted at once, and the superficial veins of the arm thrombosed. This precluded further attempts and the wounds were dressed properly after each incision. Repeated examinations failed to show any fetal life. At 8.30 Dr. Macdonald and myself saw the girl again. The cervix was still hard, but would admit the tip of one finger in the external os. A hot one-per-cent. lysol douche was given, and at 11 p.m. Dr. McPherson put in two glycerine ichthyol tampons. At midnight another 1,000 c.c. of saline were injected. The bowels now began to move freely, and at 3.15 a.m. the head presented, and Dr. Hollis, our senior house surgeon, expressed the fetus, and shortly after the placenta and membranes. Very little blood came away and the uterus firmly contracted. The patient was very much better and slept during the early morning. Rectal enemas were now given of water, and the patient was given one ounce of magnesium sulphate. The urine increased to twenty ounces in the twenty-four hours. On December 9th, 1914, the urine was cloudy still, acid, 1021 sp. gr., loads of albumin, no sugar, granular and hyaline casts, red blood cells, leucocytes and epithelium. December 13th, urine clear amber, albumin present, but less red blood cells. December 19th, urine clear amber, 1023, no albumin, no sugar, a few red cells and epithelium. The patient sat up on the seventh day and made a very good recovery.

(2) Miss Hilda S., age 21, Finlander, primipara, admitted March 26th, 1915, at 7.30 p.m., in labor. Normal delivery of a seven-pound female child; very little blood was lost; a slight laceration of the mucous membrane occurred. I saw her for the first time just after the birth of the placenta. She had been given chloroform as the head was coming over the perineum. I felt her pulse and there was no abnormal tension. So far as I know no analysis of the urine had been made, though I had assumed that it had and everything was normal. At 1.30 a.m. the patient complained of a severe headache, and was given aspirin. Of course, the urine should have been examined by the

house surgeon, but was overlooked. At 1.40 a.m. she had a convulsion lasting three minutes. She frothed at the mouth and was very cyanosed. She was given one-eighth of morphia. At 2.15 a.m. she had another fit similar to the first and was given another one-eighth of morphia. We had a new house surgeon and he was not so familiar with my practice in these cases. At 3.45 a.m. she had another convulsion, was very much cyanosed, and a very weak pulse. A catheter specimen of urine was now taken and sent to the laboratory. It was loaded with albumin and had many casts, kind not noted. The patient was given an enema with good results. Three convulsions occurred between 7 a.m. and noon. Two ounces of magnesium sulphate were given after the stomach was washed out. I was only notified now; I had been given to understand by telephone that the patient had developed puerperal insanity when she realized that she actually had a child. I was thus misled as to the actual condition. When seen at 1.30 p.m., the patient was in a hot pack, so I left orders for an interstitial injection of sterile normal saline and the withdrawal of blood. I ordered 1-200 of a grain of hyoscine hydrobromide in addition to another one-quarter grain of morphia. When I left the patient she was talking somewhat sensibly to me through an interpreter, but complained of a severe headache. Shortly after I had left, before the hot pack was finished, she had a very severe convulsion which lasted five minutes. Artificial respiration had to be resorted to. Then my orders began to be carried out. A one-two-three enema was given, followed by a hot s.s. enema. She had very marked varicose veins of the vulva, and while getting ready to catheterize her, the house-surgeon noted that one was just about to burst, and, getting a dish, he just had to touch the vein and the blood gushed out. Twenty ounces were collected in this unique way, and then the bleeding was stopped and a dressing applied. Shortly after this she began to twitch a little, and, fearing another convulsion, the house-surgeon gave a little chloroform. She was seen at about 4 p.m. by Dr. Macdonald, who ordered twenty grains of potassium bromide to be given by bowel. She did not retain it, however. She passed a fair night and was given 1½ ounces of magnesium sulphate in the morning. There was still albumin in the urine, but the total quantity of urine passed in twenty-four hours was increased, and gradually the urine cleared up. From the time of the first convulsion until the disease was well under control was about twenty hours. The remainder of the convalescence

was without anything of sufficient interest to record. The urine was cleared up on discharge. The temperature went to 100.8 after the second convulsion, and gradually fell.

The last case I shall give a synopsis of is one of the worst I have ever seen, and I consider we were very lucky to have saved the woman.

Mrs. Rosie L., age 20, Russian Jewess, primipara, a patient of Dr. L. J. Solway, who was called in an emergency and sent her, very wisely, to the hospital at once. She was admitted March 20th, 1915, at 8.30 a.m. She had had three convulsions at home, and was in a condition of coma when brought in by Dr. Solway. At 8.45 she had another convulsion lasting three minutes. She was given one-quarter grain of morphine sulphate by Dr. Baker, the house-surgeon, and two minims of croton oil by mouth. She, however, vomited it, and continued to vomit a quantity of dark green fluid. I was summoned to the hospital, and examined her. I had her given a stomach lavage and a couple of ounces of magnesium sulphate given by the tube. I then had 1,000 c.c. of sterile normal saline given under the breasts. I asked Dr. Macdonald to look at her with me, and we decided on emptying the uterus as soon as we could get the cervix fully dilated. It was then very rigid. There was a nearly full-term fetus to be palpated with difficulty owing to the uterus being very tightly contracted on it. An anterior vertex presentation was made out, but the fetus was considered dead as no movements nor fetal heart sounds could be discovered. She was given an enema and got ready for the operating room. Under light ether anesthesia, I catheterized her and gave a hot one-per-cent. lysol douche, and then with care dilated the cervix with a Goodall dilator until it would admit one finger. I then introduced a No. 1 Voorhees' hydrostatic bag and filled it and clamped it and put a string on the end of it for traction, and sent the woman back to the ward. The pulse on beginning the anesthetic was 100 and poor, and the patient was comatose. The urine went almost solid on boiling with the large amount of albumin. There were blood and granular casts.

At 2.30 p.m she had another convulsion; no urine or bowel movements had occurred up to 5 p.m., when I again visited her. The bag had not yet come through. She had another severe convulsion lasting about four minutes, and went into a state of coma afterward. I had her taken to the operating room again about 6 p.m. On very slight traction on the bag it pulled through. After a preliminary lysol douche, I examined her

again, and the cervix was still rigid, though very thin. I put in the No. 2 bag under light ether anesthesia. I then pulled on it slightly, and the cervix suddenly relaxed and the bag pulled through after about five minutes. I again examined and found the cervix dilatable, and the head engaged at the superior strait in an L. O. A. position. I dilated the cervix manually to full dilation, and then applied the Copeland axis traction solid-bladed forceps, and attempted to deliver. Unfortunately, however, though the forceps held splendidly with no sign of slipping, the head I found to be hydrocephalic, and after some little delay I had to perforate, and then delivered with the forceps. The solid blades protected the maternal parts against the jagged edges of the perforated skull. She was given 1,000 c.c sterile normal saline under the breasts, and several ounces of blood were lost after the delivery. The placenta and membranes were removed manually and a hot inter-uterine lysol douche was given. She was returned to the ward at 7.30, pulse weak and respirations rapid and shallow. She was ordered to have camphor in oil, grains 3 q. 1 h. At 10 p.m. I again visited her. She was still vomiting and out of the anesthetic. I had her given a one-two-three enema. I ordered her to have 1-150 of a grain of atropine sulphate hypodermically. I visited her in three-quarters of an hour and found that the enema had been fairly successful. I ordered her to have six ounces of saline by the bowel every four hours. She was allowed to have malted milk, water, and weak coffee by mouth. By morning she was considerably better, still no urine was voided as yet.

She was given ten grains of urotropine in hot lemonade every four hours. The lochia was moderate in quantity. I saw her in the morning again and she was considerably better. At 11.10 a.m. she had another convulsion lasting several minutes. (She had voided ten ounces of urine at 10 a.m.) She went into a state of coma after the convulsion for about ten minutes. At 11.50 she was resting quietly and was conscious. The blood pressure in her case was never high. 120 mm. of Hg. Tycos. before and during one convulsion. The bowels moved freely. At 2.10 p.m. she had another convulsion. There was a very offensive odor from the mouth. I saw her again at 3 p.m. and ordered two ounces magnesium sulphate by mouth and another one-two-three enema. This was followed by a free evacuation. At 6 p.m. she had another convulsion. Tap water was now ordered to be given by bowel. For the next two days there was nothing of importance: the urine was increasing to about twenty-five ounces per day. She had some cough; slept fairly

well. Orders were left for the withdrawal of blood and for a subcutaneous saline if there were any more convulsions.

March 24th.—Patient has a severe headache. Seems dazed. Bowels are moving freely. Slight twitching of the muscles of the extremities. Slept most of the day. Restless and twitching and headache. At 6.15 p.m. given one-quarter grain morphine sulphate hypo. Bowels moved freely. At 7 p.m. she had another convulsion. Dr. Baker withdrew four ounces of blood and put her in a hot pack. There was no reaction to this. At 10 p.m. she had another convulsion which lasted a long time. She was put in a hot pack for half an hour and sweated well. She was very violent. Tap water was given by the bowel continuously. At 1 a.m. she had a convulsion, was very cyanosed and very weak; thready, low-tension pulse. Dr. Beatty, our pathologist, who was available, withdrew fourteen ounces of blood, and Dr. Baker gave about 1,500 c.c. of sterile normal saline under the breasts and into the axillae, and gave one-quarter of a grain of morphia hypo. Urine was voided involuntarily. The pulse improved and she had no more convulsions. Although she had severe headaches for several days after this she gradually improved and the urine increased in volume and the albumin gradually disappeared. I have examined the urine repeatedly, and there is not the slightest trace of it. She was naturally weak for some time, and a few days ago her blood showed 75 per cent. hemoglobin. She has lately come to me privately and the uterus is subinvoluted, but gradually going down under hot douches and glycerine ichthyol tampons. I am giving her hypodermic injections of iron and arsenic, Zambaletti, with some improvement.

Thus it will be seen that in actual hospital practice, where there are rapid changes of the resident staff, it is hard to have a technique carried out at first until a series of precedents are handed down. But imperfectly as these methods have been carried out, they have given results that are not surpassed by any other, and are superior to most.

73 Bloor Street East.

Addenda: Since writing this paper, I have had some four ward cases of pre-eclamptic toxæmia, two post-partum, which yielded to the above measures without convulsions. I saw three cases in consultation—one woman, delivered of dead child, was very edematous, gasping for air, venesection recommended, 25 oz. of blood withdrawn, immediate improvement, also inhalations of oxygen and hypodermoclysis, cure; 2nd case not so severe, cure; 3rd case had not obeyed her doctor's orders, had not seen him for months, had three convulsions, long attempts at forceps extraction, then breech delivery. Patient moribund when I first saw her, failed to respond to any stimulation; my prognosis of speedy death confirmed in half an hour.

A TREATMENT FOR PRURITUS ANI

(Maryland Medical Journal.)

By Harvey B. Stone, M.D.

As is of course well recognized, pruritus ani is properly a symptom and not a disease. Without discussing exhaustively its etiology, pathology, etc., the cause of the distressing itching may be found in some local lesion, such as hemorrhoids, pin worms, eczema, and various other conditions, or in some constitutional disturbance, of which diabetes may be mentioned as an example. Obviously, where the cause is known, the principles of treatment will be determined by the particular nature of this cause, and it is not the purpose of this paper to discuss such cases. There remains, however, the large and most difficult group of cases in which no causative factor can be definitely discovered and which are grouped under the term idiopathic pruritus.

Various theories—acid secretions, latent infection with special types or organisms, central and peripheral nerve disturbances—have been advanced to account for the condition. No less various treatments have been employed for its alleviation. The whole gamut of ointments, powders, lotions, irrigations, etc., have been employed with varying but never general success. Cauterization, X-ray exposures and vaccines are rather more recent attempts to solve the problem. Operative measures, such as the Ball and Lynch procedures, for division of the peripheral cutaneous nerves, have been employed. The fact that the latter have a certain field of usefulness and popularity is evidence of the extent to which the patient is willing to go to seek relief. One who has listened to the histories of such cases, with long months and years of intolerable annoyance and distress, broken rest, lost sleep and impaired health, will feel that the attempt to improve our methods of attack upon this condition is not an unworthy field of endeavor. It is the purpose of this paper to make a preliminary report of such an attempt.

The success of alcohol injections for producing local lasting anesthesia in facial and other forms of neuralgia suggested the application of the same principle for the abolition of unpleasant sensations from the anal and perianal regions. The alcohol of course, produces its effect by destruction of the nerve fibres with

which it comes in contact. Hence, in essential principle, such a treatment is quite analogous to the Ball and Lynch operations referred to above, in which the cutaneous nerves are destroyed by direct mechanical division, instead of by chemical attack. The alcohol method presents certain definite advantages that will be referred to later. There are certain possible disadvantages also that will be considered at once. Since there is no selective action of alcohol, by which motor nerves are spared, and only sensory ones injured, one might expect a loss of sphincter control if the injections were allowed to come in close relation with the motor branches to the muscles. Also, an injection of a substance causing tissue destruction, if too superficially placed, might be expected to cause a slough and resultant ulceration.

In order to test these possibilities by actual experiment, alcohol injections about the anal regions in dogs were performed, the depth of introduction being varied. Without detailing the protocols of experiments, the following facts were clearly proved: Alcohol injections will produce complete local anesthesia. If introduced deeply enough to come in contact with the motor nerves, sphincteric paralysis and resultant incontinence are produced. If introduced quite superficially—that is, within the skin itself—superficial sloughs are caused. It is quite possible, however, and not very difficult, to produce anesthesia with no sphincter paralysis or skin ulceration; and this by introducing the needle entirely through the skin, but injecting the alcohol immediately under the skin and never deeper than that.

The method has been tried so far in only four clinical cases and for a period so far covering only a few months at most. This, therefore, can only be considered a preliminary report. The facts observed are as follows: Entire and immediate abolition of the itching from the area injected, along with other sensation, leaving an anesthetic zone. No sphincter disturbance. A slight superficial slough in one case where the injection was made into the skin proper instead of under it, due to the patient pulling away just at the moment of injection. The anesthesia may last at least three months; how much longer I am not prepared to say.

As to technique, it is simplicity itself. An ordinary hypodermic needle and syringe, boiled, is filled with 70 per cent alcohol. The skin is prepared as for ordinary hypodermic injection. The needle is introduced well through the skin in the area to be treated, and then made to travel along directly under the skin, depositing the alcohol, until the whole area has been thus infiltrated. The

needle is never plunged in deeply, nor is it allowed to engage in the corium while injection is taking place. The thing is much easier to do than it sounds. The injection causes acute intense pain for a short time, one to two minutes only. Then sensation is lost. This may be prevented by a light general anesthetic, if desired, or by preceding the alcohol injection by that of some local anesthetic. There is no subsequent treatment required.

This method accomplishes practically the same thing as the operative treatment for pruritus, and is fairly indicated in those cases of great intensity where usual measures have failed. It has certain distinct advantages over the operative procedures. It is safer; there is no undermined skin with impaired circulation, with a potential dead space under it, in an area impossible to keep clean. It is quicker. It entails no dressings, stitches or other post-operative annoyance to physician or patient, and no hospital expense. It is quite as likely to be enduringly satisfactory, and presents no greater possibilities of trouble.

The cases herein reported without detail have been done in the Johns Hopkins Dispensary since January, 1915. It is the intention to carry the work further as opportunity offers and publish a more extensive report at some later date.

Dominion Medical Monthly

And Ontario Medical Journal

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COMMENT FROM MONTH TO MONTH

Twilight Sleep was introduced into America about a year ago, though all will remember the old scopolamine-hyoscine-morphine treatment of a decade ago. If it be a safe measure for good the profession will welcome with all due enthusiasm its advent as something which will render the travail of childbirth painless. It has been employed in Toronto, both in hospital and private practice, as well as in other Canadian cities; so our Canadian profession has not been backward in this respect compared with other cities on this continent.

But what strange times have we fallen upon! Not long since the public press—and this "new" treatment first gained notoriety on this continent through the medium of a lay magazine—attempted to bludgeon the medical profession to employ Friedman's so-called "cure" for tuberculosis, and with the most unhappy results. Again the public press is cutting in before the medical profession have seemed to satisfy themselves that the treatment is one void of all danger to both mother and child; for, if the medical press is to be believed, the opinions of eminent members of our profession on the subject are very conflicting. Therefore, each general practitioner must experiment and observe for himself.

Still, there is this fact which stands out prominently—obstetricians with large clinical experience are apparently satisfied with its favorable aspects.

Prospective mothers and others appear to have entirely overlooked the fact, however, that this treatment is attended by greater danger to the child than in natural labor; for, it would appear in the vast majority of cases, the child is born in a state of suspended animation. Indeed, from cases reported, it is not to be considered that the mother is altogether free from danger.

There is also a delusion connected with this treatment. It is asserted that the woman in labor is not free from pain, that it is not unusual to have her crying out for "twilight sleep" after she has already received the injection. Some have been even known to cry out for chloroform. In other words, she has the pain all the time, but fails to remember that she had it when in labor, on the passing of the effects of the injection.

Two points stand out pre-eminently: That the doctor and nurse should be in constant attendance; that it is best administered in hospital. It is doubtful if it can ever be administered in every home.

Saskatchewan has adopted a good law with regard to childbirths. Every time a mother gives birth to a child the province pays her $25. The medical attendant also receives for each case from the Government a fee of $15. Thus, by wise provision, does the Government of Saskatchewan seek to counteract the evils of "race suicide," rewards the mother for her part in populating the State, and recompenses the physician, who is recognized as an important factor in the betterment of the race. As time goes on the physician becomes closer attached to the State, not alone in public health, but now at the beginning of life of the State's greatest asset, the life of every child.

Public Health and Preventive Medicine presents a great field for statesmen. For long years the health of the people was subordinated to the health of the cattle on the hills and prairies. The great war is more than decimating the nations. The problem will be not so much race betterment as one to fill up the ranks. The two, however, must ever go hand in hand.

In the province of Ontario recently, two important commissions have been appointed. There are others. It is doubtful if

all of them combined commence to measure up to the importance of public health and preventive medicine. Those commissions already appointed are composed of men who give all their time to the work in hand, on large salaries.

The Board of Health of Ontario, for many years, has given its services gratuitously. Preventive medicine, of course, has never been very active in party politics; but when it is realized by the people what a vast amount of good a Commission of Public Health, composed of whole-time officers, could do for the people, then the people will demand to be better protected from the ravages of disease.

Speaking of Public Health, is there any responsibility resting on the medical profession, or its representative bodies, such as the Medical Council, the Academy of Medicine, or the provincial medical associations in regard to the right teaching of the public with regard to all matters pertaining to preventive medicine? And as to newspaper treatment?

Many of the large dailies now run, especially in their Saturday editions, columns which, if they are to be run at all, should surely be contributed by some responsible person delegated by some representative medical society or body. It is surely not in the best interests of the people, the medical profession, or the newspapers to have syndicated articles from irresponsible persons.

If public health matters are to be dealt with in the lay press by people who are not physicians at all, but mere quacks in some American city, simply exploiting the public for their own selfish ends, then the people should be apprised of the standing of the men who furnish this "copy" in their own respective communities. A great newspaper which takes subscription fees from the medical profession, and furnishes "information" on public health matters from quacks, brings itself into contempt with educated people, and deserves only to be laughed at by people of common sense.

The matter of furnishing "copy" to newspapers is important enough to engage the attention of the Medical Council, as the representative body of the profession.

Editorial Notes

MEDICAL COMMISSION

Redeeming a promise made by the late Sir James Whitney to osteopaths and chiropractors, who have asked for special recognition, the Ontario Government has appointed Mr. Justice Hodgins, of the Supreme Court of Ontario, a commissioner to inquire into the whole subject of medical education. The action of the Government comes after a long delay.

During the past five years the Private Bills Committee of the Legislature, and even the Government itself, have frequently been asked by the Osteopathic Association and also the chiropractors that they be allowed to practise as regular doctors, barring the use of medicine, and also be allowed to establish colleges. The osteopaths specially desired protection for qualified practitioners from unqualified osteopaths.

The investigations of Judge Hodgins will take some time, as there are many branches that will have to be probed. He may have a report ready for the next session of the Legislature. The duties of Judge Hodgins are outlined as follows:

WIDE POWERS GIVEN.

To inquire into and report upon all or any matters relating to education for the practice of medicine in or affecting the Province of Ontario; the constitution, powers, duties and regulations of any body corporate or unincorporated and of any faculty or department thereof having any relation to medicine, the exercise of the same and the revenue and expenditures thereof; the situation, legal or otherwise, of such bodies in regard to each other or to the province; the establishment, creation, control and regulation of any new body intended to have relation to medicine; the existing or possible methods of examining, licensing or otherwise authorizing the carrying on by individuals of the practice of any methods having any relation to medicine and the standards prescribed and followed or proper to be established and followed; the present positions, status and practice of osteopaths, dentists, nurses, opticians, optometrists, chiropractors, Christian Scientists or others practising or professing medicine; the existing laws of Ontario in relation to any of the foregoing and their practical operation; any matter arising out of the foregoing which it is necessary to investigate with a view to the above inquiries.

DOCTORS MET IN EXETER

One of the most successful meetings of Huron Medical Association was held in Exeter on Wednesday last, Sept. 8th. Some twenty or more physicians of Huron sat down to a splendid dinner at the Central Hotel. The Seaforth doctors and an auto load, including Doctors Septimus Thompson, McGregor, Arnott, Shoebotham and Beale, from London, were too late for dinner.

The meeting was called to order in the Public Library by the President, Dr. Kennedy, of Wingham.

The Secretary, Dr. Redmond, read the minutes of the previous meeting, which were approved. He then read a notice from the Provincial Society asking that some action be taken with regard to having all the different local associations affiliate with the Provincial Society. Drs. Emmerson, of Goderich, and McKay, of Seaforth, moved that the matter be laid over till the next meeting for further consideration. Another communication from Dr. Anderson, of Toronto, asking that the Society join with all the other associations of the Province in memorializing the government as to the need of forming a base hospital for wounded Canadian soldiers. Moved by Drs. Shaw of Clinton and Hunter, of Goderich, that the Secretary do this.

Dr. Williams, of London, was then called upon and gave an able and instructive paper.

This was discussed by Drs. Gunn, Taylor, Quackenbush and Emmerson. A motion was then moved that Dr. Williams be made an honorary member, was carried.

Dr. Emmerson, of Goderich, next read a splendid paper on "Functional Diseases of Children." This was discussed by Dr. McGregor, of London.

Dr. Gallow's paper on "Occipito-posterius Positions," came next, and a discussion by Drs. Arnott and Beale, of London, followed.

The meeting then closed, to meet in Clinton in December.

THE SUDDEN TURNING GREY OF THE HAIR

The sudden turning grey of the hair under the influence of great emotion is a phenomenon so remarkable that it has always aroused curiosity. The well-known historical instances, such as the case of Marie Antoinette, who is said to have become grey in the night before her execution, are open to some doubt, but several well-authenticated cases have been published by medical observers.

At a recent meeting of the Societe Medicale des Hospitaux of Paris, M. Lecar reported the following case: A soldier, aged twenty three years, was in a trench in Argonne which was blown up by a mine. He was projected into the air and fell, and was covered by a mass of earth, from which he succeeded in extricating himself. The detonation was such that he immediately became deaf. This was attributed to double hemorrhagic labyrinthitis by M. Coustenoble, who subsequently examined him. The deflagration of the powder produced superficial burns of the face, and there were several bruises on the head, which were greatest on the left side. He was taken to the English hospital at Arcen-Barrois, where on the following day he noticed, to his surprise, tufts of white hair at the left side of the head. These formed four "islets" in the left fronto-parieto-occipital region separated from one another by normal hairs. The loss of color was complete from the roots to the ends of the hairs and the longest hairs were just as white as the shortest. There was not a brown hair amidst them. The grey hairs were solidly implanted and could be pulled out only by strong traction. The bulbar swelling of the hair was quite decolorised. After the accident the patient suffered from spasmodic twitching of the left eyelids. The rest of the hair of the head was dark brown and there was not a white hair in the beard or moustache. The patient was an intelligent man, and the truth of his story was confirmed by the fact that his hair was described in his "livret militaire" as "marron fonce." The mechanism of sudden loss of color of the hair is not well understood. It might be suggested that in this case it was due to bleaching by gases generated by the explosion, but this was negatived by the fact that the intracutaneous parts of the hair were decolorised like the rest. The studies of Metchnikoff on the whitening of the hair due to age throw light on the question. According to him, when a hair begins to whiten there appear in the cortex round or oval cells with prolongations which gradually come into relation with the cells containing the pigment granules and absorb them. These "pigmentophages," as he calls them, then descend toward the root of the hair to scatter in the dermis, of which they are, according to him, the pigmentary cells. The pigmentophages, which originate in the medulla of the hair, disappear completely when the decoloration of the hair is achieved. This theory explains a slow and progressive decoloration of the hair of senility, and also applies to the rapid loss of color now under consideration. This rapid mobilization of the medullary cells appears to be provoked by a nervous disturbance. The place of whitening seems to be determined by the points on the scalp which have been the seat of injury.

In the case reported above it was the left side of the head and face which was most injured by the explosion and the fall of earth, the labyrinthine lesions were more marked on this side, and the twitching of the eyelids was confined to this side. It was solely on the left side that the hairs were whitened. This influence of local causes is illustrated by cases which have been recorded of partial canities on parts submitted to pressure.

SUBSTITUTES FOR GERMAN DRUGS

The war has brought forcibly to our notice the extent to which the Germans had been allowed to control the British drug trade. Many drugs hitherto regarded as British products have been found unavailable or procurable only at greatly enhanced prices owing to the fact that they were "made in Germany," whilst others are difficult to get because they were products made by one or other of our Allies whose factories have been put out of action by the war. Practitioners will be glad of information which will enable them to distinguish "alien" from "allied" productions and help them in the selection of suitable substitutes which will enable them to prescribe with due regard to patriotism and economy as well as the welfare of the patients.

The Prescriber (January and March, 1915), publishes the following list of the more important of these products with their chemical equivalents. The list is by no means complete, but in case of doubt the best procedure is to prescribe the drug under its original name and to add the words "British substitute," leaving the selection to the pharmacist.

Airol: Bismuthi Oxyiodogallas.
Alypin: Amydricainæ Hydrochloridum.
Antipyrin: Phenazonum.
Anusol: Sanusin.
Aristol: Thymolis Iodidum.
Aspirin: Acidum Acetyl-salicylicum, B.P.
Benzozol: Guaiacol Benzoas.
Bromipin: Brominol.
Chloralamid: Chloral formamidum, B.P.
Creosotal: Creosoti Carbonas.
Cystopurin: Urosolvene.
Dermatol: Bismuthi Subgallas.
Dionin: Ethylmorphinæ Hydrochloridum.
Diuretin: Theobrominæ et Sodii Salicylas, B.P.

Duotal: Guaiacol Carbonas, B.P.

Eau de Cologne: Spiritus Coloniensis, B.P.C. (many excellent British brands are obtainable).

Eucaine (beta) Lactate: Benzaminae Lactas, B.P.

Enquinine: Quininae Ethylcarbonas.

Europhen: Butyl-cresyl iodidum.

Exalgin: Methylacetanilidum.

Fibrolysin: Thiosinamin Sodio-Salicylas.

Formamint: Tablettae Formaldehydi, B.P.C.; Formalin Tablets (Formitrol, etc.)

Helmitol: Formamol.

Heroin: Diamorphinae Hydrochloridum, B.P.

Hetol: Sodii Cinnamas.

Ichthyol: Ichthamol; Ammonii Ichthosulphonas.

Iodipin: Iodatol; Iodinol.

Lysol: Liquor Cresol Saponatus, B.P., resembles Lysol in properties, and there are many good brands of "British Lysol" on the market. It is usually sufficient to order as "Lysol (British)."

Medinal: Sodium Mallourea.

Mesotan: Salicylic Methoxy-methyl ester. Methyl Salicylas, B.P., may be prescribed in its place.

Migrainin: Antipyrinae Caffeinae Citras.

Potassium Salts: Many of the potassium salts being at present manufactured in Germany, it is advisable, where possible, to prescribe the equivalent *sodium* salt.

Protargol: Argenti Proteinas.

Purgen: Phenolphthaleinum, B.P.

Pyramidon: Amidopyrin.

Salvarsan: Arsenobenzol. Salvarsan is now being manufactured by British makers.

Sanatogen: This is a mixture of casein and sodium glycerophosphate, and there are many good products to replace it. "British substitute" may be ordered.

Somatose: Albumose.

Stypticin: Cotarninae Hydrochloridum.

Styptol: Cotarninae Phthalas.

Tannoform: Methyl di-Tannin.

Tannigen: Acetannin; Acidum Acetyl-tannicum.

Trional: Methyl Sulphonal, B.P.

Urotropine: Hexamina, B.P.

Veronal: Barbitonum, B.P.

Xeroform: Bismuth tribromphenol.

News Items

Dr. Crawford McCullough, Fort William, Ont., has been visiting in Eastern Canada.

The corner-stone of Mount Hamilton Hospital was laid recently by Sir John Hendrie.

Lieutenant-Colonel E. C. Ashton, M.D., Brantford, Ont., has been promoted to the rank of Brigadier-General.

Dr. R. G. Brett, medical director of the Banff Sanitarium, is to be appointed Lieutenant-Governor of Alberta.

Professors John J. Mackenzie and T. G. Brodie are returning to Toronto for the work at the University the coming session.

Dr. Oswald C. J. Withrow, who served in the 96th Lake Superior Regiment, has joined the 81st Battalion as medical officer.

The employees of the Massey-Harris Co., Toronto, will establish a convalescent home in England and will provide for its maintenance.

Dr. Alf. Haywood, assistant superintendent of the Toronto General Hospital, home on sick leave from France, has returned to the front.

McGill University is to receive $150,000 from Dr. James Douglas, New York, and Queen's $50,000. Dr. Douglas is to be the new Chancellor of Queen's University.

Queen's University Hospital at Cairo, Egypt, is said to be the best equipped hospital in that region of warfare. Queen's desires the return of Professor W. T. Connell for sessional work.

Dr. W. V. Sargent has arrived home in Kingston, Ont., after an exciting trip to England. Going across, the ship was chased by a submarine; returning as medical attendant on the *Hesperian*, which was torpedoed.

Dr. W. A. Henderson, Sarnia, Ont., who has a commission in the Royal Army Medical Corps, has been given command of a hospital ship at the Dardanelles. The ship carries six physicians and twelve nurses, and has 450 beds.

Sir Robert Borden has stated that Canada has sixteen hospitals in Great Britain, France and the Dardanelles: eight in Great Britain, five in France, and three in the Dardanelles; with these are 2,400 men and 525 splendid nurses.

If there is so great need for army surgeons as Sir James Barr is reported to have stated, why not accept those who have already volunteered in Canada? It must be remembered several have gone to England at their own expense, and even some fought first as privates.

Dr. W. P. Manton, Detroit, Mich., was present at the opening meeting of the Academy of Medicine, Toronto, on the 5th instant, and gave an address (with lantern demonstration), on "Marriage Rites and Obstetric Practices among Ancient Romans." After the meeting, the President, Dr. W. H. B. Aikins, gave an informal reception at his residence.

Dr. Lachlan Sinclair, Walkerton, Ont., died on the 21st of September, aged 77 years. He was a pioneer practitioner in that section of Ontario, and for many years did a large consultative practice. He was a graduate of the University of Michigan. The late Dr. Sinclair was a kindly and sympathetic man, and much beloved by his patients and confreres.

Medical Council of Canada

OCTOBER EXAMINATIONS, 1915

The examinations of the Medical Council of Canada will be held in Montreal and Halifax coincidently on October 12th, 1915.

Forms of certificate may be obtained from the Registrar at any time.

Registration for the October examination will close promptly at the Registrar's office in Ottawa on September 14th, 1915.

R. W. POWELL, M.D., Registrar
180 COOPER ST., OTTAWA

Publisher's Department

THE NEURASTHENIC INVALID.—Like the poor, the neurasthenic is "always with us," and while the stress and strain of modern life and living continue, the physician will be called upon to treat the more or less chronic invalid who exhibits all sorts of bizarre symptoms, in endless and kaleidoscopic variety. It is, of course, an easy matter to advise the physician to search out and remedy the operative cause of the disorder, but it is not always as easy to do this, especially when no organic changes are discoverable. While purely symptomatic treatment may be unscientific, it is usually essential, in order to gain and retain the confidence of the patient. There is, however, one pathologic finding in a large majority of cases, and that is anemia of greater or lesser degree. In some instances this may be found to be the essential cause of the neurotic symptoms. In any event, this condition should be corrected, and for such purpose there is no better remedy than Pepto-Mangan (Gude). When a hematinic is indicated for a nervous, cranky man, or a finicky, more or less hysterical woman, Pepto-Mangan is peculiarly serviceable, as the patient cannot consistently object to the taste, which is agreeable to every one. The digestion is not interfered with in the least, constipation is not induced, and the blood-constructing effect of the remedy is prompt and certain. It is always worthy of trial not only in the anemia of the neurasthenic invalid, but also in all conditions of blood and tissue devitalization.

A VALUABLE MECHANICAL LAXATIVE.—In view of the many varieties of liquid petrolatum with which the drug market abounds, and the questionable quality that distinguishes much of it, physicians will welcome the announcement that Parke, Davis & Co. are supplying a product, under the designation of Liquid Petrolatum Heavy, that bears a substantial guarantee of purity and efficiency.

Liquid Petrolatum Heavy, P. D. & Co., is a product of high specific gravity and great lubricating power. It is tasteless, colorless and odorless, and is guaranteed to be free from sulphur compounds, acids, alkalies and all harmful by-products.

Liquid Petrolatum Heavy is not a purgative. Neither is it a laxative in the general sense of stimulating the bowel by local irritation. Its function is that of an intestinal lubricant. It passes

in toto through the alimentary tract, not a particle of it being digested or absorbed. It mingles with the food in the stomach and upper intestinal tract, with the result that the feces become thoroughly lubricated and pass through the lower bowel more rapidly than they otherwise would and are expelled from the colon more promptly and with greater ease. Not the least valuable feature of this liquid petrolatum is its protective effect on the stomach and intestine, it being well known that abrasions or irritations of the mucous surfaces permit bacterial infection and general toxemia.

Liquid Petrolatum Heavy may be taken with a pinch of salt or a dash of lemon juice, if the patient so desires, or it may be floated in a glass of water, wine, milk or other beverage. The dose recommended for adults is one or two tablespoonfuls morning and night, before or after meals, for the first two or three days. Later the amount may be diminished. To insure against possible mistakes, physicians will do well to specify "P. D. & Co." on their prescriptions.

On another page of this issue will be found the advertisement of Oak Hall, Clothiers, Toronto. Their handsome store is at the corner of Yonge and Adelaide Streets, and is famous all over Canada for its boys' clothing; also, men's and young men's, carrying as they do thousands of suits, reefers and top coats of all kinds, and all the newest ideas for the boys of various ages. There are few firms who enjoy the distinctive place in the clothing world as this celebrated house, of having clothed the boys of over two generations; nevertheless this is a fact, and fathers who are buying clothes to-day at Oak Hall for their children were clothed themselves as boys, and their fathers before them, when Oak Hall was the leading clothing store some years ago on King Street East, when that part of the city was the hub of commercial industry. On account of Oak Hall's connection with Canada's greatest clothing manufacturing industry they are unable to issue a catalogue, because of the numerous retail houses in all parts of Canada who handle the output of this famous firm and the confliction it would cause with their travellers. They are prepared, however, to take care of all mail orders sent to them in a way that will please even the most fastidious, no order is too small to receive the most careful attention. All goods when not paid in advance are sent C.O.D., and your money will be only on deposit with them until you are perfectly satisfied. Their advertisement in this issue is devoted to men's overcoats, which is a special feature of their showing for fall and winter.

Dominion Medical Monthly
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Original Articles

RADIUM AND TRICHLORACETIC ACID IN DERMATOLOGY*

By Dr. W. H. B. Aikins, Toronto.

In this paper I desire to discuss two agents which have proved invaluable to me in the treatment of certain diseases of the skin. It may seem strange that these two materials have been linked together in this title, instead of dealing with each agent separately, but when it is considered that in many cases radium and trichloracetic acid are complementary one to the other, it will be more readily understood why such a title was chosen.

The use of radium and its great value in the treatment of certain affections has of course been recognized for years. Ever since Wickham founded the first Radium Institute in Paris and put radium therapy on a sound scientific basis, evidence continues to accumulate as to the great value of this therapeutic agent when properly used.

My attention was first drawn to the use of trichloracetic acid as a valuable adjunct in treating skin lesions by my friend Dr. Douglass Montgomery, of San Francisco, who found it valuable in the treatment of seborrhoeic and senile keratosis. Trichloracetic acid occurs as white deliquescent crystals, having a melting point of 55° C. and readily soluble in water. It is a substance which has been in use for some time among dentists and laryngologists, but very little reference to it is found in medical literature. In many cases it has been supplementary to treatment by radium. Like the latter the scar left after its use is negligible, an excellent cosmetic result being obtained.

The most important effect of the acid on the skin is due to its keratolytic action. It dissolves horny epithelium. Mont-

*Read at the meeting of the Ontario Medical Association, Peterborough, Ont., May, 1915.

gomery showed this action by dropping some of the pure acid on shavings of horny epithelium. The shavings swelled up into a clear jelly, and on examination with a microscope an immense number of fat droplets was found along the intercellular junctions. It gave an appearance as though the intercellular substance was principally attacked and the fat was being squeezed out of the tissue. Such being its action it can readily be seen why it has such a special use in the treatment of keratosis. The thickened cornified epithelium is softened and falls off as an eschar, leaving smooth almost normal appearing skin beneath.

Technique.—The method of application is comparatively simple. When the tissue is much thickened a quicker result may be obtained if the dermal curette is first used to remove a large portion of the excrescence.

The acid may be applied either as the pure crystals or in concentrated solution. A dressing probe or match point or glass rod makes an excellent applicator. The lesion to be treated must first be wiped thoroughly dry, alcohol or ether being used. The normal skin around may be protected by vaseline. The acid is then applied and rubbed in with some pressure. The tissues quickly become a dead white, and the patient complains of a stinging pain. When this occurs mop off the treated area with water until all burning sensation has ceased.

In many respects the action of trichloracetic acid is similar to that of carbon dioxide snow, but it is much less painful, as practically all pain is removed by the mopping with water. It can also be used in the form of pastes.

The dermatological conditions in which trichloracetic acid may be of service are many and varied. As has been mentioned, it is a most useful agent in the treatment of keratosis, and the proper treatment of keratosis is important on account of the frequency with which epithelioma develops from keratotic lesions. Occurring most often in the elderly, particularly those who during their life time have been exposed to the wind and sun a great deal, still it is not uncommon to see keratosis develop in those of middle life. Depending on the type of skin upon which they develop keratoses are hard, thick masses, which can be scraped off with difficulty, being as it were torn from the underlying tissues, or they are soft, greasy, friable and readily removed by

light scraping, leaving the underlying skin soft, pultaceous and frequently undergoing epitheliomatous degeneration. Recognizing as we do the importance of removal of what we now regard as pre-cancerous patches, the early treatment of such spots of keratosis cannot be over-emphasized. Radium is a most useful agent in their treatment, preferably employed after the removal of the crusts by a dermal curette. It is used in sufficient dosage to produce a mild reaction.

Where many spots of keratosis are present, and the application of radium might be tedious and take up considerable time, the saturated solution of trichloracetic acid may be substituted. In a few minutes numerous spots may be treated, and without very much discomfort to the patient. Recurrences are rare.

In the treatment of warts, moles and xanthoma it is very efficacious. If the wart or mole is much elevated above the surface of the skin, it is better not to attempt to destroy the whole lesion at once, but by successive applications gradually cause its disappearance.

Lupus Erythematosus.—The intractability of this condition very often to treatment is well recognized, as is shown by the long list of remedies which various authorities mention for its cure. No routine plan can be adopted, for what is successful in one case may not produce so beneficial a result in another. Several cases have done excellently by means of radium. Sometimes in the same patient certain of the lesions respond to radium, while others do not. One case of mine showed this in a marked degree. The patient had patches of lupus erythematosus on the cheek below the eyes, at the back of the ear, on the forehead and on the nose. She had had a prolonged series of treatments, when on the Pacific Coast and in Chicago with carbon dioxide snow with no benefit. After this she came to me. Under the action of radium the patches on the forehead, and behind the ear, and most of it on the nose disappeared, but the others would clear up for a time and then recur. Trichloracetic acid came to my notice about this time, and I used it on these stubborn patches with very gratifying results.

Lupus Vulgaris.—Practically all authorities agree that the best results in the treatment of lupus are obtained by the use of the Finsen Light, but the tediousness of the treatment, and the difficulty the patient experiences in obtaining it render it not always the method of choice. Here radium exerts a remarkable influence, and if used in destructive doses causes retrogression of the diseased tissue, leaving as radium always does leave a

good cosmetic result. For small isolated nodules use has been made of applications of trichloracetic acid, which is an agent of considerable value in such cases.

Nævi.—For small nævi destruction by caustic action is often the most convenient method of treatment. I refer to lesions so small as to perhaps deserve to be called telangiectases rather than nævi. There are one or two fairly prominent, dilated capillaries. It is recognized now, I think, almost universally, that no method of treating these vascular new growths can be compared for cosmetic result with the general obliteration of the vessels brought about by the proper use of radium. Some times for these very small points quick action is desired, and patients will not devote the time required for treatment. Electrolysis is used, but as a rule the resulting scar is far more disfiguring than the original mark. Solid carbon dioxide has its advocates, and certainly good results are obtained from its use. It is a painful procedure, however, and if too much pressure is applied great destruction of the tissues may be produced and considerable scarring result. Trichloracetic acid in these cases acts well; it produces but slight pain during its application and the resulting scar is not disfiguring. One field where a wide sphere of usefulness exists is in the treatment of the telangiectases, which so often result after the use of X-ray. When destructive doses of X-ray have been used telangiectases, as it is very well known, are apt to develop.

The appearance of the part can be materially benefited by treatment of the dilated capillaries, which may be readily destroyed by applications of trichloracetic acid, leaving a good cosmetic result. It is applicable also to condyloma and scar cicatrix.

Radium.—Speaking now more particularly of the use of radium in dermatology, one naturally turns at first to its value in the treatment of rodent ulcer, for of all forms of malignant disease this is the one in which radium is almost a specific. It was in the treatment of this disease that the therapeutic value of radium was first definitely established, and the way paved for the further research on its curative value in new growths.

A great number of cases of rodent ulcer have come under my observation in the last few years, and it is one of the most satisfactory things in the practice of medicine to note that the great majority respond readily to this treatment, and have remained cured over a period of years. It is true of course that certain cases do not respond as well as others. This is particularly so when all sorts of treatment, such as X-ray, CO_2, ionization, etc.,

have been previously employed. It would appear that from being acted upon by so many different physical agents, the tissues have lost their vitality and their ability to form granulations, so that while the disease may be arrested complete healing does not occur. Then again where cartilage or bone is involved great care must be exercised in the dosage given, as too heavy exposure may produce a very painful and prolonged inflammation of the parts. Ordinarily where such parts are not affected I have found the most lasting results to follow sufficient dosage to produce quite a severe reaction. This reaction comes on about a week or ten days after exposure, and shows itself by inflammation of the part with later the development of a radium crust. In about six weeks this crust detaches itself and a smooth, supple, scarcely noticeable scar is left.

The following cases illustrate the excellent results to be obtained from the use of radium, after other methods had proved ineffective.

Plate I. Rodent ulcer of eight years' standing.

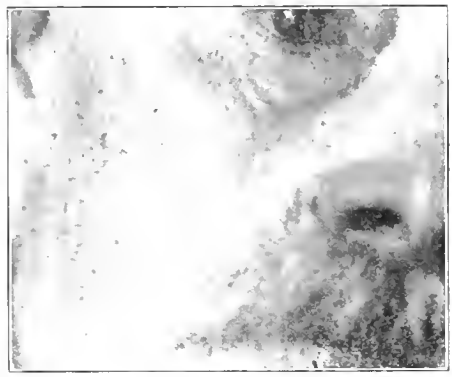

Plate II. Same patient as in Plate I. two months after radium treatment was begun.

H. S., aet 54, referred by Dr. Charles McKenna, Toronto. A rodent ulcer developed on the right cheek 8 years ago. Under the X-ray the ulcer healed, but broke down again in three or four months time. For 10 months he underwent treatment with the electric needle without result. When he first came under observation the lesion presented the appearance seen in Plate I; the ulcer was three-quarters of an inch in diameter, with a thickened margin and granulations covering its base. Following a single series of radium treatment healing took place, so that, in two months the

appearance was that shown in Plate II. At the present time the condition is most satisfactory, there being a smooth supple cicatrix present.

The second case was in a man of 39, referred by Dr. Baldwin, Benito, Manitoba. Five years ago an ulcer developed above the right eyebrow. With the exception of ointments no treatment was received for three years. During the last two years he had received treatment with carbonic acid snow, and had one application of the X-ray. The appearance is seen in Plate III; the ulcer being one and one-half inches in diameter, and extending down to the bone. The edges were much thickened. A heavy radium exposure was given, following which healthy granulations

Plate III. Rodent ulcer of forehead, present for 5 years.

Plate IV. Healing produced by the use of radium on case illustrated in Plate III.

formed and gradual cicatrization took place. Plate IV shows the appearance at the present time. Complete healing has occurred.

Epithelioma of the Skin.—Radium used on squamous-celled epithelioma of the skin gives excellent results. Depending on the depth of involvement slight variations must be made as regards the length of application; screening the apparatus, etc. Where there is a good deal of thickening of the edge of the ulcer, or it tends to be fungating, preliminary curettage hastens the cure, the radium plaques being applied a few hours later. Prolonged exposures using heavily screened apparatus which emits only the harder beta and gamma rays, should be given, and healing takes

place with a minimum of inflammatory reaction. Naturally the tendency of squamous-celled carcinoma to form metastases in the neighboring lymph glands must not be overlooked.

One special use of radium in new growths of this nature is as a prophylactic following surgical removal. This is a wise procedure, and one which is quite firmly established as a routine measure in centres where special attention is devoted to the study of malignant disease. Certainly many cases in which one would ordinarily expect to have recurrences have been free from such by the combined use of operative procedure and post-operative radiation.

Epithelioma of the Lip.—Although not in the strict sense of the term a dermatological lesion, yet certain cases have given such satisfactory results with radium that one may perhaps be

Plate V. Epithelioma of the lip. Before treatment.

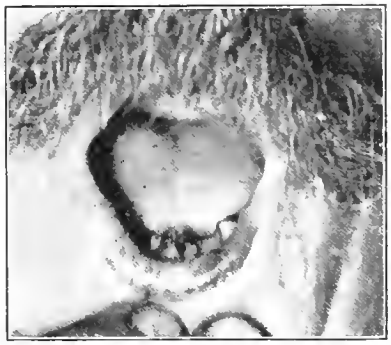

Plate VI. After treatment by radium. The lip is healed and smooth.

pardoned for referring to it. When the ulceration is superficial and the lesion is freely moveable on the underlying tissues, in my experience radium furnishes a clinical cure, and from its ease of application and little discomfort to the patient is the method of election. I have seen cases previously operated upon, with recurrence, clear up completely under its use.

The two cases illustrated show what may be expected from the proper use of radium. The appearance shown in Plate V was present in a man 55 years of age, referred by Dr. H. L. Anderson, Niagara-on-the-Lake. It had begun as a small ulcer three years before. When he came under observation almost all of the red surface of the lower lip was involved, presenting a central ulcerated portion surrounded by a hard margin. The thickened edges were curetted and a heavy exposure to radium

given, resulting in a fairly severe reaction. Two months later the lip was quite healed and presented the appearance shown in Plate VI.

In a man of 77, referred by Dr. W. J. Wilson, Toronto, there was present an epithelioma on the left side of the lower lip, which had been cauterized by his physician without result. The patient was so feeble that operation was not to be entertained. The appearance is shown in Plate VII.

The ulcer was as large as a ten cent piece with indurated base and edges. Twelve hours exposure with a plaque containing half a centigram of radium was given. In ten days a crust had formed which detached itself in about six weeks' time, leaving a perfectly smooth healed surface, as seen in Plate VIII.

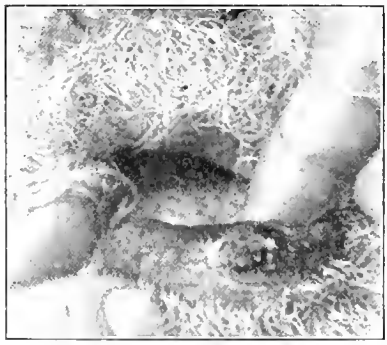

Plate VII. Epithelioma of the lip. Before treatment.

Plate VIII. Same case as Plate VII. After treatment by radium.

Warts and Papillomata.—These benign growths of the skin yield readily to comparatively short exposures to radium. The importance of having such treated cannot be over-emphasized when one considers the frequency with which malignant disease of the skin develops on the site of a pre-existing papillomatous growth.

Acne Vulgaris and Acne Keloid.—Chronic cases of acne vulgaris particularly when associated with scarring respond well to radium rays.

Keloid.—This disfiguring condition met with not uncommonly after severe burns yields to no method of treatment as it does to radium. It would almost appear that keloid tissue was specifically influenced by the radium rays, and the prognosis is excellent when the lesion is not of too long standing. When the keloid is painful radium exerts a distinct anæsthetic effect. If

screened applicators are used for a prolonged period of time a gradual absorption of the keloid tissue may be brought about without any surface irritation. This method of course takes longer, and if time is a factor of importance, unscreened plaques may be used, and a destructive reaction produced.

A patient referred by Dr. H. A. Bruce had a severe burn involving the dorsum of both hands, and extending up the forearm. In healing an enormous amount of keloid tissue was formed, so that she was unable to move the wrist or bend the fingers of the left hand. (Plate IX.) She had a prolonged

Plate IX. Keloid before treatment, showing deformity and fixation of joints.

series of X-ray treatments without result. Her surgeon asked me to use radium which I did, with already a marked improvement. The keloid thickening is much diminished, in some places almost gone, the wrist is quite moveable and the fingers also. (Plate X.) Treatment has had to be suspended for some weeks owing to advanced pregnancy, but I hope to renew it shortly. The prognosis is excellent for the keloidal tissue to become all absorbed.

Nævi and Angiomata.—For the treatment of these disfiguring marks radium gives us a therapeutic agent which readily supersedes all other means which previously had been employed.

As regards the flat port wine stain the prognosis depends on the ease with which pressure will cause a blanching of the mark. If gentle pressure suffices to expel the color a very optimistic view may be entertained as to obtaining a good cosmetic result. Radiation is given in sufficient dosage to cause just a slight superficial reaction. This is repeated from time to time until fading has been produced. The keynote to success in the obtaining of a good permanent result in these cases is to be content to proceed cautiously. One must be prepared to keep the patient under observation for a considerable period of time,

Plate X. Shows improvement after a series of radium applications. Note the flexion of the fingers.

giving treatment as indicated, and on no account to hurry. Moreover, one finds that with these cases the personal factor must be taken into more than ordinary consideration, and great care exercised that too much reaction is not produced. If one does unavoidably give too long an exposure to a patient with an exceptionally sensitive skin, telangiectases are apt to subsequently develop.

Angiomata.—These do exceedingly well under radium rays and are best treated by screened plaques applied for longer periods. In this way a gradual shrinking of the mass is brought about without surface reaction. This is important because where

the growth is so vascular there is some danger of hæmorrhage if ulcerative reaction should be produced. In these cases it is often possible to employ "cross-fire," a method devised by Wickham for producing as it were a concentrated fire on a tumor mass. Plaques are placed on opposite sides of the growth so that the tissues receive double radiation. Unless such angiomatous tumors are supplied by a large vessel, as evidenced by pulsation, the manner in which they appear to melt away, is most gratifying.

Lupus Erythematosus.—I have already spoken of the value of radium in Lupus Erythematosus. The difficulty of curing this disease is well recognized. Radium has however in some cases where not much previous treatment has been used been productive of good results, and the lesions have permanently disappeared. In using it treatment should be applied to the tissues surrounding the lesion as well as to the actual lesion itself.

Lupus Vulgaris.—Used in a destructive way, radium acts with good effect in this condition. Heavy doses must be given, and as in lupus erythematosus the surrounding tissues treated. Radium has a peculiar scope in the treatment of lupus in situations such as within the nasal cavity.

Pruritus.—The application of radium has a marked analgesic action, and this is well seen in the treatment of certain persistent cases of pruritus. Short exposures of strong plaques will relieve the intolerable itching after all other methods, including cauterization, X-ray, etc., have failed.

Chronic Eczema.—A similar satisfactory result may be obtained in the treatment of patches of chronic eczema. A dosage sufficient to produce a mild stimulation will result in the clearing up of persistent thickened patches which have resisted all other treatments.

Acne Rosacea and Rhinophyma can now be treated successfully with radium, as well as certain parasitic diseases and tuberculosis of the skin.

In this somewhat brief manner the great value of radium in the treatment of dermatological lesions has been discussed. To go more into detail would be beyond the range of this paper. The endeavor has been made to show the large variety of conditions in which such an accessory physical agent is not only useful but absolutely necessary if any satisfactory result is to be obtained.

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TWILIGHT SLEEP *

(Reprinted from the New York State Journal of Medicine.)

By Abraham J. Rongy, M.D., F.A.C.S., New York City.

It is fully ten months since "Twilight Sleep," as developed by Gauss, has been introduced in this country. During this period various obstetricians have given this method of treatment a fair trial, and have reported their work from time to time through the usual medical channels. It may here be stated that no medical subject in recent years has created such widespread discussion among the public. The press recounted miraculous reports daily of women who had gone through childbirth painlessly. Photographs appeared regularly together with exaggerated descriptions of the wonders that this method accomplished. Women were informed that labor conducted under the new treatment would suffer no shock, their vitality would be conserved, and that they would be in such fine and fit condition that they could leave their beds the day following the birth of their babies.

The vivid descriptions of "Twilight Sleep," as an absolutely painless labor, naturally attracted the attention of a great number of expectant mothers, and obstetricians were very soon confronted with a problem which they were, as yet, unable to solve. At that time the medical profession had to form their opinions on the work done at Freiburg, and other foreign clinics, and therefore the advice given to their patients was not based upon personal experience, or observation. Very soon investigations, as to the merit of this form of treatment, were instituted in many of our obstetrical clinics, and here, I dare say, that their early reports were tinctured with a certain amount of enthusiasm due primarily to the fact that the statements of the mothers influenced, to a great extent, their opinions as to the value of this method of treatment.

In our enthusiasm we overlooked the most essential fact in the entire procedure, namely, that "Twilight Sleep" and painless labor are not synonymous, and that in a large number of cases pain is but little influenced. Furthermore, the degree of pain bears no relation to amnesia. A patient may suffer a great deal of pain during the progress of her labor, and still have no recollection of it the following day. This will always form the basis for differences of opinion

*Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 27, 1915.

between the medical profession and women who have been subjected to this form of treatment.

That the testimony of these women is incompetent is obvious, and as such should be given no consideration in arriving at conclusions as to the value of this method. Scientifically, we must judge this mode of treatment from the standpoint of analgesia, and not amnesia. It is the actual diminution of pain that the medical profession should be directly concerned with, and all our efforts should be concentrated to accomplish this. It is of comparatively small importance to us, and should be to the woman, whether or not amnesia is obtained. Heretofore the report of successful cases were practically based upon the degree of amnesia obtained, making analgesia of secondary importance.

As our experience increased we, of necessity, were compelled to arrive at a different conclusion. We soon found that a large number of women suffered a great deal of pain and discomfort, and the question suggested itself to our minds whether we were not, to some extent, responsible for an inaccurate presentation of this subject to the medical profession. I believe it the duty of each and every one of us to correct this false impression, both from the medical and lay aspects, and to particularly impress the public that "Twilight Sleep" is not synonymous with painless labor. It is incumbent upon us to point out that professional journalists and other women, no matter how honest and well meaning they may be, are absolutely ignorant of the scientific aspect of this method of treatment, and cannot possibly have, or form a proper conception of it.

We have now reached a stage in the development of this work where we are confronted with a peculiar situation, which heretofore has been entirely ignored in the various discussions upon this subject. It is now well established that if this form of treatment is properly carried on, it will produce amnesia in approximately 75 per cent. of cases. Many of these patients, because of extreme intoxication of the more highly developed nerve centres, fail to retain the memory of pain, leave the hospital honestly believing that they have actually had no pain. Such women will, of necessity, tell other women that childbirth by this method is absolutely painless.

The attending physician, however, has before him an entirely different picture. He knows that these women have experienced pain, he has heard their screams, and was even accused of being cruel for refusing to administer "Twilight Sleep" to them. The opinions of the physician and patient concerning this form of treatment must always differ, and antagonism upon the scientific

merit of this procedure will always exist between them. It is quite improbable that any effort to harmonize them would meet with any degree of success.

It is certainly most unfortunate that the first comprehensive description in this country of this form of treatment appeared in the lay publications, for not only did it create a strong prejudice against it within the medical profession, but it also tended to reflect upon the professional reputations of such eminent scientists as Kronig and Gauss, who, after most painstaking efforts extending over a period of eight years, have succeeded in developing an accurate and well defined technic in the administration of scopolamine-morphine in connection with labor.

Our profession has invariably proved itself equal to all occasions, and in this instance it is to be regretted that a number of our foremost obstetricians were unduly hasty in expressing their opinion of this method through rather unusual channels without thorough investigation.

We all know that a legitimate amont of conservatism is absolutely essential on the part of the medical profession, so that a proper equilibrium may be obtained, and the public be protected against the results of over-enthusiasm. Those who are familiar with the history of medicine are fully conversant with the fact that most new methods of treatment, especially those which have been radical departures from routine and accepted standards, have always brought forth sharp protestation and even condemnation on the part of those who refused to progress with the advances made in science.

In reviewing the history of scopolamine in relation to obstetrics, we find that it is passing through the same process of evolution common to all new methods of treatment. It is but natural to expect, at this day, that a great deal of opposition should arise against it. Not only is it condemned by those who think that they have had some experience, but even by those who have made no attempt to give this method a fair trial.

To produce "Twilight Sleep" clinically, the attending physician must have a concrete conception or mental picture of what he is seeking to accomplish. In Dammerschlaf the patient is able to perceive but not apperceive. The patient should always be able to answer commonplace questions, even though the responses be somewhat delayed, indicating a sluggish mental state. Between pains the patient should rest quietly or fall asleep. During a pain the patient may moan or even cry out, move about aimlessly and entirely forget its occurrence as soon as it subsides. In other words, an inco-ordinate subconscious mental state must be evenly main-

tained and any deviation from this will invariably lead to undesirable results.

As a general rule, it may be stated that no form of treatment will meet with the same success in the hands of all who use it, even though the technic followed be the same. What then should we expect to accomplish with a form of treatment in which the technic and dosage varied with each and every instigator?

A study of the literature reveals the fact that there are two distinct groups opposing this method of treatment. (1) Those who have tried the method occasionally, based upon no definite technic, with results correspondingly unfavorable. (2) Those who have given this method a fair trial but have not followed the technic as outlined by Konig and Gauss.

Before taking up the physiological action of scopolamine and morphine, it would not be amiss to touch upon the physiology of labor pains and our aim to modify or alleviate these by the use of drugs.

We must differentiate between objective pain by which we understand uterine contractions, and subjective pain, which is that sensed by the mother. Any method which has for its object the elimination of subjective pain, must, under no circumstances, interfere with objective pain.

It is a well-known fact that the pain caused by uterine contraction, does not affect all women alike. Every experienced obstetrician has occasionally seen a patient in whom labor had progressed to a stage of complete dilatation without any physical evidence of pain. We must, therefore, conclude that the degree of subjective pain depends upon the sensitiveness of a given nervous system. It is equally well known that the degree of sensitiveness can be modified by the use of many therapeutic measures.

The central nervous system is the seat for the perception of pain. Impulses are conducted to and from it. The degree of pain depends both upon the ability of the cortex of the brain to receive and upon the nerve trunks to conduct. If, by any method, we are able to minimize either the perceptive power, or the degree of conductivity, pain may be markedly diminished, or even entirely abolished.

From the above it may be seen that the progress of labor does not depend upon subjective pain, and that this may be diminished or eliminated without interfering with the normal progress of labor. Labor essentially depends upon the degree of uterine contraction for its successful termination. The purpose and object of this method of treatment is primarily to obtain a mental state in the patient by which the receptive and perceptive powers are dimin-

ished without the complete loss of consciousness. Clinically, this is best accomplished by the judicious use of the combination of scopolamine hydrobromide and morphine.

It is not my intention to discuss the various physiological manifestations produced by these drugs upon the central nervous system, for I feel certain that their effects are too well known to all. I shall only attempt to call attention to the effect produced by these agents in their relation to obstetrics.

The action of scopolamine is chiefly upon the central nervous system. It quiets the cerebrum and diminishes the perception of pain, without apparently influencing the contractility of the uterus. Labor, therefore, may progress uninterruptedly and the patient may not only fail to recollect these pains, but may even be entirely unaware of them.

Clinical Types.

Clinically these cases may be divided into three distinct groups: (1) Those patients in whom we obtain both amnesia and analgesia, that is, abolition of memory and diminution of pain; (2) patients in whom we obtain analgesia without amnesia; (3) cases which entirely fail to respond to this treatment.

Technic.

In order to obtain the best results with this method, certain cardinal requisites must be strictly observed. It is absolutely necessary that the patient be so placed that she will be free from all disturbing influences. A physician or nurse should be in constant attendance. The effect of the drug should be carefully watched so that it may be repeated at proper intervals. Light in the room should be so arranged that the patient is not disturbed by it. The fetal heart sounds should be carefully studied. The solutions used should be obtained from reliable chemists, and should be accurately standardized. It should be perfectly clear, never having any sediment or flocculence, and should preferably be put up in ampules each containing the quantity required for a single injection.

For purposes of accurate statistics, special charts were printed, indicating the important points to be noted.

Our rule is to admit to the hospital only those patients who are in active labor. We, therefore, have no means of judging precisely when labor sets in, nor the average duration of the first stage.

Treatment is begun only when the patient shows definite signs of active labor. The patient is then put to bed in a dimly lighted

room, and an initial dose of 0.00045 gm. or approximately 1/135 of a grain of scopolamine hydrobromide is injected intramuscularly. This is preceded by a hyperdermic injection of one-half grain of narcophin. The effects are now carefully observed with special reference to pulse, respiration, pupillary reaction, fetal heart sounds and frequency and intensity of uterine contractions. A second injection of 1/400 of a grain of scopolamine is given about one hour after the first one. About one-half an hour after this injection memory tests are brought into play. The patient is shown some object, such as a doll or watch and a short while later she is asked whether she remembers having seen the particular object in question, or she may be asked whether she remembers having received a hyperdermic injection. Any test of memory will do. The repetition of injections is now primarily gauged by the degree of amnesia present, this being the guiding point throughout the treatment. The interval between injections is approximately one to one and one-half hours. The average normal case requires from five to seven injections, although at times it may be necessary to give only two or three, or as many as twelve or fourteen.

At the completion of the first stage, with the presenting part on the perineum, one c.c. of pituitrin is often given to hasten delivery. In using pituitrin in these cases, especial attention should be paid to the fetal heart sounds, for there may be danger of producing asphyxia in a child which is already oligopnoic. As soon as the child is born, the cord is quickly ligated and severed and the infant is removed to another room. The mother is made comfortable and usually falls into a deep slumber, to awake two to four hours later often in complete ignorance of the fact that she has already given birth to her child.

Our experience with this form of treatment consists of a series of 300 consecutive cases in the obstetrical services of Jewish Maternity and Lebanon Hospitals. As previously stated, these cases were subdivided into three groups with the following results: (*a*) 231 cases, or 77+% in which there was complete amnesia with varying degrees of analgesia; (*b*) 37 cases of 12+%, in which there was varying degrees of analgesia without amnesia; (*c*) 32 cases, or 11% in which the treatment failed to produce the desired effects.

Total Average Dosage.

In primiparæ scopolamine hydrobromide 1/50 of a grain. In multiparæ 1/66 of a grain.

Number of Injections.

Smallest number, one; largest, twenty-two.

Dose of scopolamine, smallest, 1/400 of a grain; largest, 1/5 of a grain.

We shall now attempt to emphasize those phrases associated with labor and the post-partum period which are of special interest to the obstetrician.

Duration of Labor.

Since our patients are admitted only when in active labor we have no precise means of judging its exact duration. Labor is unquestionably prolonged, the delay occurring in the second stage. The first stage is somewhat shortened.

The average duration of labor in our series figuring from the time of admission to delivery was eight and one-half hours. The average time that the patient was under the influence of scopolamine was seven hours in primiparæ and three and one-half hours in multiparæ.

Restlessness.

Six cases had marked restlessness requiring restraint. A great number displayed varying degrees of restlessness not requiring restraint.

Hemorrhage.

No appreciable alteration in the amount of hemorrhage was noticed by us, and Beruti by actual weights in over 400 cases proved that bleeding was somewhat diminished.

Perineal Lacerations.

Second stage is somewhat delayed and stretching of the perineum is more gradual and lacerations are therefore less likely to occur. Siegel reports six first degree lacerations in seventy-eight spontaneous deliveries in primiparæ, or 7 per cent. Harrar and McPherson report thirty-seven lacerations in 100 cases treated with scopolamine as against forty-five lacerations in 100 cases not so treated. In our series there were forty-five, or fifteen per cent. lacerations in which suturing was required. However, the fetal heart sounds must be watched closely or the life of the child may be endangered.

Operative Procedures.

In this series labor had to be terminated artificially in fifty-two cases, or 17+%. In four patients the breech presented and delivery was accomplished by bringing down a foot. In forty-

eight cases delivery was terminated by the use of the forceps. Of these five were median and forty-two low. Two cases were nephritic with marked odema and it was deemed advisable to terminate labor quickly.

Anesthetics.

In the most recent report by Siegel of Freiburg in a series of over 200 cases, ethyl chloride by inhalation was administered as a routine during the stage of expulsion. This is done in order to further obviate any recollections of pain.

It has been found that in order to carry out this form of treatment successfully, the patient must be constantly kept under the influence of the drug. Should she at any time during the course of the treatment partially regain consciousness, she will not only recollect the pain which she actually experienced, but will reconstruct the entire progress of labor. Such isolated periods of relative consciousness are termed by Gauss "isles of memory." These are more apt to occur during the stage of expulsion. In our series we do not find it necessary to resort to the use of the general anesthetic for this purpose.

Ether was the anesthetic used when artificial delivery was performed. The use of chloroform for any purpose during labor was abandoned by us about three years ago. The patients were very quickly narcotized, taking the ether very readily and consuming very small quantities of it.

Contraindications.

With the possible exception of kidney complications and primary inertia, we find no contraindications for the use of this method. Zweifel even goes so far as to recommend it in eclampsia and reports three cases treated successfully.

Endocarditis was present in eight cases with no untoward effects as a result of this mode of treatment. On the contrary we believe that this procedure is especially efficacious in labors associated with cardiac diseases, for it tends to eliminate, not only the mental anxiety, but the actual physical strain induced by the patient's efforts to help labor along.

Convalescence.

It is interesting to note how little these patients are physically affected by labor. The exhaustion that usually accompanies labor in primiparæ is partly eliminated. They usually appear restful the following day, for instead of having passed the previous day

in pain and wakefulness, they had gone through labor in a state of semi-consciousness without any undue physical exertion.

In this series one patient developed postpartum psychosis on the fourth day. Within the same week two more cases occurred in my obstetric service at Lebanon Hospital. Owing to my absence from the city scopolamine was not given in these two cases. I consider it most fortunate that this method was not used in two of the cases, for I feel certain that the mental state would have been attributed to the use of this drug. This naturally would tend to discredit this mode of treatment, resulting most likely in its discontinuance. That this coincidence would create a most peculiar situation was more so impressed upon me by the fact that when the attending neurologist was asked to see these patients, he immediately inquired as to whether they had had "twilight."

Another interesting illustration of this kind occurred in a child which was born oligopneic. Failing to improve, resuscitation by the catheter method (the only method used by us), was resorted to and continued for two hours, at which time the heart action ceased. It was early noticed that the cardiac impulse was on the right side. Permission for autopsy was finally obtained. The findings were very unusual. A large congential opening was present in the left muscular portion of the diaphragm. The stomach, small intestine, greater part of the large intestine and spleen were in the thoracic cavity. Both lungs were collapsed, and the heart was situated on the right side. The liver occupied the entire abdominal cavity. Without autopsy, this death would undoubtedly have been attributed to the use of scopolamine. It has always been the fate of any new method of treatment to ascribe to it many complications that would have taken place ordinarily, and it is only through mere accident that we occasionally are able to account for them otherwise.

We have also observed that the tendency toward engorgement of the breasts is notably diminished in these cases. This is probably due to the action of scopolamine on the peripheral secretory nerves.

Conclusions.

1. Standard solutions are absolutely essential for the success of this treatment.

2. No routine method of treatment should be adopted. Each patient should be individualized. This method does not merely consist of repeated injections of the scopolamine at prescribed intervals, but the mental state of the patient should be made the guiding point. A subconscious state must be evenly maintained.

3. Facilities should be such that the patient is not unduly disturbed.

4. A nurse or physician must be in constant attention.

5. This method of treatment is best carried out in hospitals, although there is no reason why it cannot be accomplished in well regulated private homes. However, if for any reason, the physician attending a patient at her home, does not see fit to institute treatment early in labor, he surely can utilize this method in the second stage, and still save the woman a great deal of unnecessary pain. That this may be accomplished was demonstrated in eight cases in whom treatment was instituted at the end of the first stage of labor. All of these cases had marked analgesia with complete amnesia.

6. It does not affect the first stage of labor, but the second stage is prolonged.

7. Pain is markedly diminished in a great per cent. of cases, while amnesia is present in 75 per cent. of patients, but labor is not painless as is generally supposed.

8. This treatment does not in any way interfere with any other therapeutic measure which may be deemed necessary for the termination of labor.

9. Fetal heart sounds must be carefully watched. Sudden slowing calls for immediate delivery, if possible, or treatment must be discontinued. Fifteen per cent. of the babies were born oligopnoic.

10. Asepsis and antisepsis cannot be rigidly enforced.

11. No change in the course of the puerperium was observed, and convalescence progressed very smoothly in our entire series.

12. Women of a higher grade of intelligence are best suited to this form of treatment.

13. This treatment is best carried out in primiparæ or in multiparæ with tedious labors. It has no place in short labors.

14. This is an ideal form of treatment in patients suffering from cardiac disease.

Finally, every experienced obstetrician is fully aware of the fact that the number of births showing anomalies, such as premature rupture of the membranes, incomplete dilatation of the cervix, abnormal presentations and primary inertia are on the increase. It is equally well known that women following a profession requiring a superior mental development, have more difficult deliveries. The demands made by hard work, or by social obligations upon the modern woman in our large cities, are so great that their nervous systems are constantly overworked. What we consider a

normal nervous system now rarely exists, and therefore pain is not well borne.

In our opinion, subjective pain incident to childbirth, serves no purpose in nature, but is rather an unnecessary result of an unchangeable natural law that all severe muscular effort is accompanied by pain. The metabolic end products of muscular activity are irritating to nerve ends causing pain. Thus, we see severe pain accompanying the hurried muscular peristalsis of the bowel in ridding the system of injurious material, the excruciating colicky pain caused by the propulsion of a biliary or renal calculus, and finally, the agonizing pain incident to expulsion of the fetus from the uterus. In trying to relieve these pains, we are not in conflict with a natural purpose. If pain can be relieved, it is the duty of every physician to do so, and no effort should be spared to accomplish it.

For our part we are fully convinced that this method of treatment instills within the woman a feeling of confidence which naturally aids her in passing through this trying ordeal, and although the greatest number do suffer varying degrees of pain, still there is no mental recollection of it in 75 per cent. of cases, and if the physician, as well as the patient, contents himself with amnesia as the object to be accomplished then only will its proper place in obstetrics be established.

Discussion.

Dr. W. T. Getman, Buffalo: I think the distrust of "Twilight Sleep" among the medical profession comes from two factors: Lack of personal experience with the treatment, or of non-adherence to the technic worked out so carefully by Gauss.

From all that I can learn of the bad results reported by various hospitals and men it has been from using their own technic rather than the one that has proved safe in a number of thousands of cases. These bad results come from repeating the dose of morphine, over dosage of scopolamine, and using some other index than that of the memory test for repeating the scopolamine.

We have used the treatment at the General Hospital in forty-seven cases, and I have used it in twenty-five private cases outside, without any foetal or maternal mortality due to the drug, and with better results as our experience increases.

We are, however, using it only in selected cases—primiparæ and in multiparæ where we expect a longer labor than normal, as I find that if started too late in labor in a primiparæ or in the ordinary multiparæ with a short labor, that there is a higher percentage of cyanosis.

The ordinary baby does not need any more attention than where no drug is given, as practically all of them breathe spontaneously.

There is a certain amount of idiosynerasy in the patient's reaction to scopolamine as shown by one patient that received seventeen doses (the highest in our series) with absolutely no amnesia, but who twice called for a drink of water as the head was passing through the vulva, and seemed more interested in the fact that her throat was dry than in the birth of the head.

I have used it in three cases of preclamptic toxemia during induction of premature labor, and I think it was of material aid by lessening the wear and tear of the process.

Personally, I think very highly of "Twilight Sleep," and consider it perfectly safe if used properly.

ADDRESSING OF MAIL

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Unnecessary mention of higher formations, such as brigades, divisions, is strictly forbidden, and causes delay.

ONTARIO MEDICAL ASSOCIATION

Organization and preparedness are the watchwords these days, and so it seems fitting that the Ontario Medical Association should make plans early for the annual convention to be held in Toronto in May, 1916. Work is now being done, not only to insure success at the next meeting, but also to co-operate with the profession throughout the Province in organization of County Medical Societies along the lines approved of by the Peterborough meeting. The latter is a big task, but seems well worth while and should commend itself to the profession.

In carrying out this campaign the Ontario Medical Association will be living up to the best traditions of its founders. In this connection a quotation from one of the Canadian medical journals of 1882, may not be out of place: "The Ontario Medical Association should promote sentiments of mutual respect and fraternity, the plentiful lack of which there is still great reason to deplore." It is the intention of the present Executive to do what they can to remedy the faults existent in 1882, and that still survive in an attenuated state in 1915.

It is interesting here to note that the Association has been in existence since 1880, and has held meetings annually since 1881. Dr. Adam Wright and Dr. J. E. Graham first conceived the idea of a provincial organization. At a preliminary meeting held to consider the matter of organization were Drs. Workman, Coventry, Graham, and J. H. Burns, Adam Wright and J. E. White. The first president was Dr. Workman. For thirty-five years the Association has prospered. There seems to be no doubt that the Executive, with the co-operation of the membership, will not allow the organization to languish even though under the stress of war conditions.

BOOK REVIEW

"Where and How to Amputate," by Lowell E. Jepson, M.S.—"One of the most important things to consider in making an amputation is where and how this shall be done so that the patient can with the most comfort and satisfaction wear an artificial limb. This booklet concisely states the principal points to be considered and this information will be of practical help."—*Journal of American Medical Association.*

Dominion Medical Monthly

And Ontario Medical Journal

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COMMENT FROM MONTH TO MONTH

Medicine has been defined as primarily and essentially the healing art. Webster's International Dictionary says it is "the science and art dealing with the prevention, cure or alleviation of disease." In no sense, therefore, can it be applied to the mere administration of drugs, as that would rule out surgery, preventive medicine, obstetrics, etc. It is the practice of all methods which tend to alleviate pain, and to correct obvious mechanical injuries.

It has taken centuries to evolve all the principles of treatment. They are intimately associated in the art of healing. It has been a practice of gradual growth, century after century, and year after year, adding to the sum total of the present available knowledge. No system of the healing art can ever be dissociated from the practice of medicine.

New methods have, therefore, from time to time arisen, are arising and will continue to arise just so long as people desire to be treated and restored to that condition of health which they consider to be normal, and treated and restored quickly, easily and pleasantly.

Should, then, this healing art which necessitates the acquirement of a vast amount of study to gain even a fundamental knowledge to practise it, in all its branches, be left in the hands of

trained men and women, or allowed to become the plaything of every man who believes he has a speedy, easy and pleasant method of restoring people to what they consider to be normal health in themselves?

The trouble with new methods of healing is that they are always too comprehensive. In that way they immediately antagonize minds which are never impulsive. The conservative and safe mind demands ample proof before it will take on with the new method. This is seen, not only in the profession of medicine proper, but as well amongst all classes, professions and callings in the community. Others, however, are easily persuaded and run swiftly after strange gods.

The profession of medicine has long recognized that there cannot be too much education in preparing a man to practise the healing art. Indeed, from the day he first enters upon practice, each medical practitioner is a constant student. He recognizes that he must ever have a voracious appetite, and endeavors to assimilate and digest whatever new thing comes into his capacious maw. It is similar in every walk of life, for the ambition to succeed stirs almost every man to constant work and action.

The healing art is for the people, not for the practitioner of it, for it has to be practised upon him as upon others. No matter what is said to the contrary, the practitioner of medicine is first and always for the benefit of the people. That is the essential, altruistic principle.

As it is essentially for the people, it is quite natural, therefore, for a man who feels he has departed from what he regards as his normal state of health, to seek the easiest and pleasantest path by which to return. Whenever any of these easy paths are discovered by a member of the medical profession it is immediately given to the world. It is not kept for private gain. That is one of the finest principles in the profession of medicine. That points the difference between the profession and the people. Whenever a layman thinks he has a therapeutic discovery, it is exploited for his own personal gain. When laymen become seized of the same altruistic principle, in this regard, that all therapeutic discoveries will be for the benefit of mankind, quackery and nostrum-exploiting will cease, and there will be no further argument as to the body designated to put them into use. All men must either hand their discoveries in therapeutics over to the members of the healing art, or properly qualify themselves to put them into effect.

News Items

Lieutenant-Colonel James A. Roberts has been raised to Brigadier-General.

The corner-stone of a new hospital was laid in Hamilton, Ont., the 24th of September.

Lieut.-Colonel H. R. Casgrain, Windsor, Ont., is said to be seriously ill in Alexandria, Egypt. Now returning to England, improving.

Dr. Walter McKeown, Toronto, has been appointed Adviser of the Medical Pension Board in England.

Toronto University Base Hospital is said to have been located in Alexandria, Egypt, and may be used in the Serbian campaign.

Dr. J. M. Robb, Blind River, Ont., is to be the Conservative candidate in Algoma for the Ontario Legislature.

Local committees are to be established in all the provinces in connection with the Canadian Hospital Commission.

McGill's Tent Town Hospital in France, under command of Colonel H. S. Birkett, is said to be a marvel of efficiency.

Dr. Charles R. Dickson, Toronto, has been elected an honorary member of the American Electro-Therapeutic Society.

Captains George R. Philp and R. S. Pentecost, Toronto, both serving in France, have been promoted to the rank of Major.

Word has been received in Toronto from Dr. Norman Wilson, Bloor Street West. He is well and working in the Dardanelles.

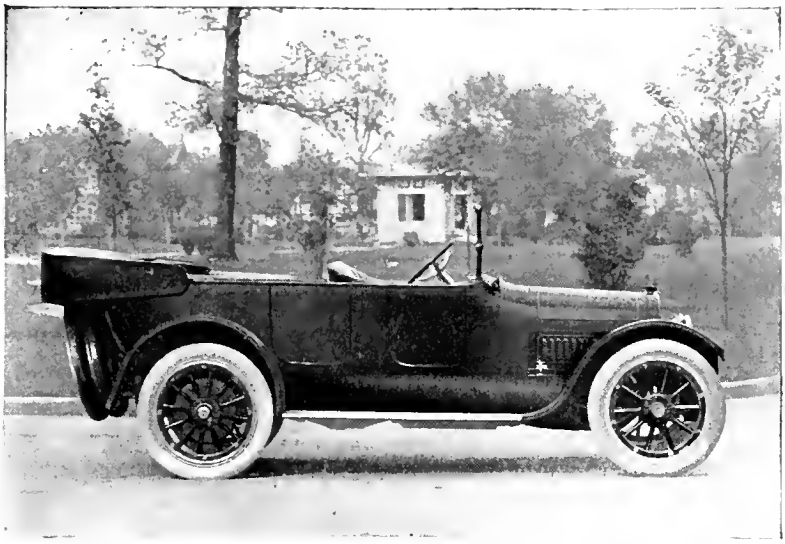
Surgeon-General George S. Ryerson addressed the Aesculapian Club on the evening of October 14th on his recent experiences in France.

The President of the Academy of Medicine, Toronto, Dr. W. H. B. Aikins, held an informal reception at his residence on the evening of October 12th, after the opening meeting of the Academy for the season. Dr. W. P. Manton, Detroit, was present.

Before the Ontario Medical Commission the following speakers stated the case for the Ontario Medical Association: President Dr. Harry B. Anderson, Drs. R. A. Reeve and Charles Sheard, and Drs. Henry Howitt and Angus Mackinnon, Guelph.

Dalhousie University, Halifax, N.S., has offered to equip a hospital for overseas service, and the same has been accepted by the Militia Department. The following practitioners have volunteered their services: Drs. John Stewart, J. G. MacDougall, Geo. M. Campbell, J. R. Corston, L. M. Murray, E. V. Hogan and A. G. Nicholls, all of Halifax.

The Governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley, assisted by the attending staff, will give a seventeenth series of clinical lectures on diseases of the skin in the out-patient hall of the hospital on Wednesday afternoons, beginning November 3rd, 1915, at 4.15 o'clock. The lectures will be free to the medical profession on the presentation of their professional cards.



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Publisher's Department

A most important point which many professional men fail to give proper attention to is the safe investment of their surplus funds. There is nothing that detracts more from the efficiency of a professional man who requires to give concentration to particular objects than to have his funds invested where it causes him worry. Every one desires to become independent so that failure of health or accident will not leave him without provision. It is said that as a class professional men are very poor investors. It is not to be wondered at. It takes a good deal of study to understand investments the same as it does to understand medicine. Anyone can put his money in the bank and draw 3 per cent. That is not good investing. Good investing requires a large interest return, say from 5½ per cent. to 7½ per cent., and at the same time have your principal absolutely secure. Messrs. C. H. Burgess & Company, dealers in Municipal Debentures, Traders Bank Building, Toronto, have recently been sending us very interesting information on this point.

"Artificial Limbs have been very much improved in recent years. Their development and simplification has created a necessity for improved surgical methods adapting the stump to the artificial limb so as to secure more comfort and many other advantages. The foremost house to develop on these lines is the Winkley Artificial Limb Company, Minneapolis, Minn. They have recently published a pamphlet on this subject, which is of great value to all interested."—*New York Medical Times.*

Bacterial-Vaccine Therapy.—The treatment of infectious diseases with preparations derived from corresponding microorganisms long since passed the experimental stage, and bacterial vaccines may be said to occupy an assured place in therapeutics. These vaccines, as is doubtless well known to most physicians, are suspensions, in physiologic salt solution, of killed bacteria. An important effect of their administration is to raise the destructive power of the patient's leucocytes against the specific living invaders. Injected into the human organism, bacterial vaccines have an effect similar to that produced on the horse by the intro-

duction of toxins or killed cultures; they cause active immunity. In other words, the administration of a dose of bacterial vaccine stimulates the patient to produce an additional supply of antibodies, thus enabling him to resist the disease.

Bacterial vaccines have several advantages over the ordinary forms of medication. They are determinate or specific in the respective infections in which they are indicated. Their employment relieves the patient of the necessity of frequent "dosing." Being administered by the physician, or under his direct supervision, they enable him wholly to control his cases.

Some idea of the scope which bacterial-vaccine therapy has come to assume may be gathered from an announcement which Parke, Davis & Co. are making in current medical journals and which physicians will do well to consult. Twenty-three vaccines are listed in the advertisement. They are supplied in 1-C.c. glass syringes, 1-C.c. glass bulbs, 5-C.c. vials, and 20-C.c. bottles, all sealed in a manner that guarantees the sterility of their contents. The syringes are designed for the use of physicians who desire to inject the fluid without first removing it from the original container.

Parke, Davis & Co.'s bacterial vaccines are scientifically prepared, and precise therapeutic results may be confidently expected from their administration.

The Value of Glyco-Thymoline in Treating Intestinal Disturbances.—The condition of the alimentary canal in all diseases of that tract is one of either congestion or depletion of the villi.

Auto-intoxication follows a condition of depletion and while this condition is not the direct cause of the "self-poisoning," the restoration to normal conditions would undoubtedly prevent septic absorption.

The condition in diarrheal diseases is one of stasis with a great amount of exudation of serum, the villi being greatly distended.

In either case a return to normal conditions is most readily effected by an agent producing an exosmotic action—in the one case to deplete and in the other to promote the exudation necessary to wash out the intestines and prevent auto-infection.

That Glyco-Thymoline will do this effectively has been demonstrated time and time again—and many clinical reports from many physicians testify to its great power as a curative agent in all such cases.

Dominion Medical Monthly
And Ontario Medical Journal

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Original Articles

ORGANIC OBSTRUCTION OF THE ILEUM AS A CAUSE OF GASTRIC DISTURBANCE*

By Graham Chambers, B.A., M.B., Toronto, Canada.

During the last few years a great deal of attention has been devoted to the study of the disorder known as intestinal stasis. This, according to Sir Arbuthnot Lane, who was probably the first to call especial attention to the affection, is characterized by stagnation of the intestinal contents, resulting in the production of toxic material, which is absorbed in greater quantity than the human anatomy has the capacity to render inert or excrete. In consequence there result degenerative changes in various tissues of the body and diminished immunity to infectious diseases. To the direct or indirect action of these disease-producing agents have been ascribed a great number of affections, including various affections of the stomach, gall bladder, liver, pancreas, kidney, skin, nervous system and lungs. Indeed, according to Sir Arbuthnot Lane, intestinal stasis is a direct or indirect cause of disease in every organ of the body.

In the genesis of intestinal stasis, Sir Arbuthnot Lane thinks that cæcal stasis is the primary condition, and that this tends to drag down the abdominal viscera with the production of stress on the attachments of the intestines which results in the formation of anatomical abnormalities such as those known as Jackson's membrane and Lane's kinks. He is of the opinion that these bands and kinks frequently lead to stagnation of intestinal contents in the ileum (ileo-stasis), and that it is in this part of the intestinal canal that the production and absorption of toxic substances generally occur.

*Read at the Annual Meeting of the Medical Society of the State of New York, at Buffalo, April 29th, 1915.

The malady, intestinal stasis, can scarcely be called a new disease. The great majority of cases now called intestinal stasis were formerly placed under the heading of habitual constipation; only a small proportion being thought to be due to organic obstruction. Neither is the conception that intestinal stasis is a common cause of disease in other organs of the body new: for from time immemorial the beneficial effect of purgatives in the treatment of diseases of almost every organ of the body has been recognized. The extent of the use of patent medicines, the therapeutic value of which is generally due to a purgative constituent, also suggests the same inference.

Under organic obstruction of the ileum, in addition to intestinal stasis caused by adhesions and kinks, is included obstruction due to nodular tuberculosis, cancer, volvulus, and intussusception of the viscus. These latter morbid conditions, however, form clinical entities by themselves, and are not usually included as causative agents of ileo-stasis.

In this paper the subject of stagnation of food in the ileum (ileo-stasis), due to organic obstruction as a cause of gastric disturbance is considered; but, in order that presentation of the subject is made more explicit, I shall, before discussing the subject of organic obstruction, refer briefly to other causes of ileo-stasis and their relations to gastric symptoms. In my opinion the causes of ileo-stasis which should be especially recognized are:

(1) Atony of the ileum.
(2) Regurgitation of the ileo-cæcal valve.
(3) Spasm of the ileo-cæcal valve.
(4) Cæcal stasis.
(5) Organic obstruction of the ileum.

Atony of the Ileum as a Cause of Ileo-stasis. In the passage of food along the alimentary tract a very remarkable feature is the rapidity with which it passes through the small gut. If one gives a small meal, such as that used in radio-logical work, the food leaves the stomach in about three or four hours, and about three hours later passes into the colon.

The further progress of the intestinal contents is relatively slow. It probably takes longer for the intestinal contents to travel three feet of the colon than it does for twenty-two feet of the small gut. The inference which we should draw from this is that nature's intention is that the small intestine, like the stomach, is a digestive tube and not a receptacle for food residues, and that it is essential for health it should be free from food-stuffs at least

once in twenty-four hours, and probably before each meal, as in the case of the stomach. If there is a delay in the propulsion of the intestinal contents from the ileum into the cæcum, ileo-stasis is said to exist. This can only be determined with certainty in one way, namely, by examination with the X-rays. If a residue of barium remains in the small intestine more than seven hours after the meal is ingested, the motility of the intestine is below normal, and the longer the time it requires for the meal to pass into the cecum, the greater the degree of hypo-motility.

I should like in this connection to say a few words about the relations of motor function of the stomach and ileum. In the study of the motility of the ileum we should always keep in mind the fact that the neuro-muscular structures of the stomach and ileum are very much alike. In both, the vagus is the motor nerve and the sympathetic the inhibitory. In both, Auerbach's plexus is present. Both viscera exhibit rhythmical movements after being separated from their extrinsic nerve supply; but whether these movements are of myogenic or neurogenic origin has not been definitely determined. The presence of Auerbach's plexus in the walls of the stomach and intestine suggests a neurogenic origin, but we should not give too much weight to this argument, for a local plexus of nervous tissue is always to be found in the innervation of smooth muscular fibres. The very recent observations of Arthur Keith that nodal tissue, similar to that of the bundle of His in the heart, is to be found in the alimentary canal, is strong evidence in favor of the myogenic theory. One might mention other physiological, experimental and clinical facts illustrating the close relationship of the stomach and small gut; for instance, both viscera are similarly affected by drugs which influence the motility, such as eserine, pilocarpine and adrenalin. Again, both viscera seem to be influenced alike by depressive nervous factors. Cannon was probably the first to call special attention to this characteristic. In his experiments he found that in animals sick with distemper and other affections characterized by general asthenia, food would frequently lie in the stomach and intestine all day without the slightest sign of peristaltic wave. He also observed that when the stomach and intestines were disconnected from the central nervous system, an animal, though extremely asthenic from disease, would frequently exhibit normal activity of these viscera. This latter observation indicates that the loss of motility in the stomach and intestines in the asthenia of infectious diseases is due principally to inhibitory influence originating in the central nervous system. It also suggests, in determining the cause of ileo-stasis in any case,

that the condition of the nervous system should be carefully considered. Cannon also made some observations on the influence of the emotions on the motility of the stomach, which are worthy of note in this paper. He found that in all states of anxiety and worry the peristaltic movements of the stomach stopped, but as soon as an animal was relieved of all sources of irritation the normal movements of the stomach began again. With regard to the influence of emotions on the small intestine, there is some difference of opinion. From the fact that the extrinsic innervation of the stomach and small intestine are practically the same, one would think that the movements of the two viscera would be alike. Cannon found this to be true in some animals. On the other hand, Esselmont and Fubini found that fear excited peristalsis in dogs; and Darwin observed that in the same animal excitement may cause uncontrollable voiding of the gut. This observation is in keeping with the well-known fact that excitement in some individuals may result in uncontrollable evacuation of the bowels.

The explanation of this want of unanimity among observers on the influence of emotions on the intestine is that the small gut receives its motor supply from the bulb, whereas the large intestine is supplied partly from the bulb and partly from the sacral cord. The extrinsic innervation of the latter is similar to that of the bladder. Under emotional disturbances, therefore, it is possible that evacuation of the bowels may occur without excessive peristalsis of the small gut.

The close anatomical and physiological relationship between the stomach and the small intestine has an important bearing on the etiology of ileo-stasis, for one should expect that both viscera would be affected alike by nervous disturbances. We recognize that gastric atony is very common and due to a great variety of causes, of which worry and anxiety over business difficulties and asthenia following infectious diseases and other constitutional disorders, are the most important. It is probable, therefore, that similar agents produce atony of the small intestine. This is the view held by Lane and Jordan. That such is the case I should like to present the following clinical evidence:

1. In a considerable proportion of cases of ileo-stasis there is a history of marked improvement during periods when the patient has been on a vacation.

2. A large proportion of cases of ileo-stasis can be cured without surgical procedures.

3. That slight adhesions resulting from surgical operations and the disturbance of peristalsis brought about by lateral anastomosis do not often give rise to subjective symptoms.

4. That intestinal stasis is more common in persons who lead sedentary lives with much brain work than in those who live in the open air and take a great deal of physical exercise.

These data indicate that ileo-stasis due to atony alone or atony associated with organic obstruction, is common. This has an important bearing on the subject of my paper, because if organic obstruction of the ileum were present in a patient with an asthenic state of the neuro-muscular system, which is a very common disorder, the symptoms referred to the stomach caused by the organic obstruction would be associated with those caused by atony of the stomach and small intestine.

Regurgitation at the Ileo-cæcal Valve as a Cause of Ileo-stasis. —From an anatomical and physiological standpoint the ileo-cæcal valve and mitral valves of the heart are somewhat similar. Both have the bicuspid structure. The mitral opening is closed by two cusps being forced together by the pressure of the blood in the left ventricle, and to a certain limit, the greater the pressure the more closely the valves are in apposition. The same is true of the ileo-cæcal valve, although contraction of the circular muscular fibres of the valve is a factor in the closing. I believe, however, that it is the intracæcal pressure which is the principal agent in closing the valve. In the normal individual, the contents of the ileum may pass into the cæcum, but the regurgitation of cæcal contents cannot occur. In persons who have suffered from appendicitis the condition is frequently different, for in such individuals more or less regurgitation at the valve is often present. One may be able to show this by radiographic examination after a barium enema. In the cadaver one can frequently demonstrate the condition by forcing the air out of the transverse and ascending colon into the cæcum: when in the normal, there will be no escape of gas into the ileum with moderate pressure, but in the presence of adhesions about the appendix or cæcum, the ileum in many cases becomes distended. In mitral regurgitation the heart may become competent again by hypertrophy of the left auricle and right ventricle. A similar change may result in ileo-cæcal regurgitation by hypertrophy of the small gut. The pressure in the small intestine itself may be a factor in preventing regurgitation. Later, if the muscles of the intestine become atonic either through psychic disturbance, general debility or enteritis, regur-

gitation again occurs, and the motor function of the intestine is incompetent.

There is a feature about the mechanism of the ileo-cæcal valve which requires careful investigation. From what has been said it is evident that the principal force in closing the valve is the intracæcal pressure due to the contraction of the cæcum, while the valve is probably opened by the force of the pressure in the ileum. Two explanations are suggested: (1) That the contraction of the ileum controls the mechanism of the valve, a peristaltic wave forcing the valve open, and as soon as the wave reaches the outlet, the valve closes. (2) That the contractions of the ileum and cæcum are co-ordinated as in the case of the auricle and ventricle. If the latter view should prove to be correct it is probable that the pacemaker of cæcal contraction is situated in the lower end of the ileum. This suggests that in cases of intestinal stasis characterized by regurgitation of the ileo-cæcal valve with compensation broken down, we may in future speak of fibrillation and flutter of the ileum just as we now speak of fibrillation and flutter of the auricle in some incompetent hearts.

I should like in this connection to mention a clinical observation which may have a bearing on the co-ordination of the motor function with that of the cæcum. It is that in marked cases of ileo-stasis of organic origin of the lower end of the ileum characterized by excessive peristalsis of the ileum and impaction of the barium in the ileum against the cæcum, the latter is frequently found empty, although there is frequently barium in the splenic flexure of the colon and rectum. It would appear from this that the excessive peristalsis in the ileum in some way brings about excessive peristalsis of the cæcum. A somewhat similar relationship exists between the stomach and intestine for, in duodenal obstruction due to peptic ulcer, there may be a residue of barium in the stomach after seven hours, and at the same time the small gut practically empty. In these cases there is generally excessive peristalsis of the stomach which in some way produces hypermotility of the small intestine, although the peristaltic wave of the former viscus stops short at the pylorus. In organic obstruction of the pylorus, in the early stage at least, the same phenomena are observed.

Let us now consider for a moment how ileo-cæcal regurgitation may cause gastric disturbance. This is germane to my paper, because ileo-cæcal regurgitation is a common complication of organic obstruction of the ileum. In discussing the subject I may be permitted again to call attention to the rapidity with which, in

health, the contents of the small intestine are propelled into the cæcum, and also to the mechanism of the ileo-cæcal valve which in the normal does not permit regurgitation. It is evident that nature intends that there shall be a sharp division between the small gut, which is a digestive tube, and the large bowel, which is essentially a receptacle for the by-products of digestion. The high vascularity of the small compared with that of the large intestine is in keeping with this view. The observation of Vaughan Harley, that after the removal of the colon in dogs there was an increase in quantity of fæces, but mainly due to unabsorbed water, the nitrogen and protein absorption being only slightly diminished, is additional evidence in favor of it. This observation also indicates that practically all the nutritive material, except water, for the maintenance of nutrition is absorbed from the small intestine.

The principal way in which ileo-cæcal regurgitation may cause gastric symptoms, is by causing auto-intoxication. In the normal condition it is highly probable that bacterial growth, inimical to health, is unimportant in the small gut for reasons which have already been given, but in the large intestine the conditions for bacterial growth are much more favorable. Now, in case of regurgitation at the ileo-cæcal valve, so far as germ growth is concerned, it is probable that the growth in the two bowels is more or less alike, especially if ileo-cæcal regurgitation is accompanied by ileo-stasis. This would result in auto-intoxication, for the small intestine has not the same defensive action as the large bowel. The question then presents itself, how does auto-intoxication produce gastric symptoms? In answer to this, I should say, first by causing mental depression, which again would have a marked action on the stomach, for the gastric digestion is closely dependent on the mental condition; secondly, by the action of chemical substances which have a direct action on the functions of the stomach. Recently a good deal of attention has been devoted to the study of these bodies, and most interesting results obtained. In illustration, I may mention that tyramine, a derivative of tyrosin, has been isolated from intestinal contents and found to be chemically related to adrenalin; and like the latter, it has marked stimulating action on the ends of the sympathetic, and would, therefore, tend to produce both gastric and intestinal stasis; thirly, by diminishing the immunity of the individual, resulting in infection of some form which is invariably characterized by gastric symptoms.

Cæcal Stasis as a Cause of Ileo-stasis.—This is of special interest on account of the importance given to it by Sir Arbuthnot

Lane in the origin of the bands and kinks which take such an important part in the production of stasis in the intestine. I may say that this theory of the sequence of disturbances has not been confirmed, and we are still in the dark with regard to the origin of Jackson's membrane, and the various kinks which are sometimes observed in intestinal stasis.

Cæcal stasis is said to exist when there is considerable residue of barium in the cæcum seventeen hours after the ingestion of a barium meal. In the skiagrams of many cases of ileo-stasis a remarkable feature is that, although there is stasis in the small gut, the barium is propelled along the colon with normal or excessive rapidity. If, therefore, cæcal stasis is the common cause of ileo-stasis, the development of the obstruction in the small gut must cure the cæcal stasis. The only cases of ileo-stasis which are frequently associated with cæcal stasis are those which occur in patients with abdominal viscera markedly displaced downward or with an old-standing mucous colitis. Cæcal stasis unaccompanied by ileo-stasis is a common finding in spasm or organic obstruction of the rectum or of the colon distal to the cæcum. It is also not an uncommon finding in splanchnoptosis. Cæcal stasis probably always tends to produce ileo-stasis and to increase the severity of it due to other causes. It should, therefore, be looked upon as a contributory factor in the production of gastric symptoms of ileo-stasis. As a disorder by itself it may, by causing auto-infection or general infection, give rise to symptoms referred to the stomach.

Spasm of the Ileo-cæcal valve as a Cause of Ileo-stasis.—Spasm of the pylorus is quite different from that of the ileo-cæcal valve as the former is regulated by the reactions of the gastric and intestinal juices. An acid reaction in the duodenum closes the pylorus, whilst an acid reaction of the stomach and neutral reaction of the duodenum tends to open the outlet. The ileo-cæcal valve is closed principally by an increase of the intracæcal pressure and spasm of the valve may be said to exist when there is spasm of the cæcum. Now, in acute appendicitis, Mr. Fenner, of the Toronto General Hospital, informs me that radiographical examinations frequently show gastric hypertonus and barium in the stomach seven or eight hours after the meal is ingested, along with barium in the lower end of the ileum, but without any barium in the cæcum. This indicates that the causes of gastric stasis and ileo-stasis were spasm of the pylorus and ileo-cæcal valve respectively. The symptoms referred to the stomach in acute appendicitis are generally what one would expect to find in

spasm of the pylorus and body of the stomach. The patients complain of sensations of fullness and pressure in the epigastrium, belching, pain in the region of the stomach, nausea and vomiting. The gastric distress is generally aggravated by eating and frequently partially relieved by belching. Vomiting also generally gives partial relief.

With regard to subjective symptoms referred to the region of the appendix there may be no complaint during the early stage when the patient may suffer from gastric symptoms. This is an outstanding feature of acute appendicitis. At this time, however, there is usually tenderness on deep pressure in the region of McBurney's point. The question arises, Why should the patient suffer from distress in the region of the stomach without distress in the region of the appendix? The most acceptable explanation, in view of the X-ray findings already referred to, is that a spasm of the caecum is present sufficient to close the ileo-caecal valve, but not sufficient to cause pain in the region, and that secondary to closing of the ileo-caecal valve ensues spasm of the pylorus, resulting in the gastric symptoms which characterize acute appendicitis. In chronic appendicitis, and especially in its exacerbations, symptoms referred to the stomach are very common. These are generally relieved by removal of the appendix alone, even in cases in which adhesions that might lead to organic obstruction or disturbance of the mechanism of the ileo-caecal valve are absent. From this it would appear that in acute or chronic inflammation of the appendix the gastric symptoms may be secondary to spasm of the caecum. This is supported, I think, by the experience of surgeons.

Organic Obstruction of the Ileum as a Cause of Ileostasis.—In studying the genesis of gastric disturbance in organic obstruction of the ileum, it is well to remember that obstruction of any part of the stomach or intestine tends to produce increased peristalsis tonus of the part proximal to the obstruction. This is a physiological principle to which there is no exception. In organic obstruction of the ileum one should expect to find, therefore, signs and symptoms of increased tonus and peristalsis of the stomach and small intestine proximal to the seat of the obstruction. This is generally true in all cases of uncomplicated organic obstruction of the ileum.

In a case of marked obstruction of the lower end of the ileum, such as that sometimes caused by Lane's kink, radiographic examination frequently shows hypertonus and excessive peristalsis of the stomach, with a residue of barium after six hours. The subjective symptoms in such a case are belching, eructations, sensa-

tion of fullness and pressure in the epigastrium, pain after eating, nausea and vomiting. These symptoms are very similar to the gastric symptoms in acute appendicitis, which were referred to under spasm of the ileo-cæcal valve. Vomiting of blood may also occur, which feature suggests the presence of ulcer of the stomach. In many cases, however, it is probable that the hemorrhage was from an erosion which, for some unknown reason, is not uncommon in obstruction of the intestine.

The characteristics of the pain in the region of the stomach in ileo-stasis due to organic obstruction are very variable. This is probably dependent partly on the degree of stasis and partly on the nervous state of the patient. In some cases the time of appearing after eating and the intensity and nature resemble similar characters of the pain observed in gastric or duodenal ulcer. This feature often renders it difficult to determine whether the particular case is one of intestinal stasis alone or intestinal stasis associated with peptic ulcer. It has been said by some writers that localized tenderness is not present in the epigastric region in intestinal stasis. This I am satisfied is not correct, for I have frequently observed in patients suffering from the disease unassociated with any lesion in the stomach that they exhibited localized tenderness in the region of the pylorus.

From what has been said it is obvious the symptoms referred to the stomach in ileo-stasis do not form a very characteristic group. It is not surprising, therefore, that the recognition of the disease by the consideration of the symptoms and signs without the aid of radiographic examination is frequently impossible. Some cases simulate chronic dyspepsia due to a gastric neurosis; others peptic ulcer of the stomach or duodenum; others again pyloric obstruction. Indeed, it may be said to simulate the majority of diseases of the stomach, and even gastric cancer. In a case recently under my care the patient, who was a merchant forty-five years of age, had lost thirty pounds weight. An analysis of gastric contents gave a total acidity of 36.5, and free hydrochloric acid of 1.5. The sediment contained Boas-Oppler bacilli in small numbers; no occult blood in faces or stomach contents. X-ray examination of the stomach showed gastric hypertonus. No X-ray examination of the intestines was made. On account of the presence of Boas-Oppler bacilli I gave an opinion that the case was probably malignant, and advised surgical treatment. An operation revealed a Lane's kink which was corrected; complete recovery followed.

Symptoms referred to the stomach in ileo-stasis of organic origin are determined to a considerable extent by the associated conditions or complications. Some of the latter are diseases of the stomach itself, such as duodenal ulcer and gallstones, which are prone to produce gastric symptoms: and others again are disturbances of the nervous system, such as neurasthenia and hysteria. Any one of these may be characterized by a group of gastric symptoms. It is obviously very difficult in any case to determine the part played by organic obstruction of the ileum in the genesis of the symptoms. This is the crux of the question of operative treatment of intestinal stasis at the present. I think that surgeons are wont to blame adhesions of the ileum for all the complaints of the patient and there is some reason for their doing so for, frequently after an operation for the removal of adhesions, etc., and the treatment associated with every surgical operation, there is a very marked improvement or a complete cure of the disease. The treatment of the patient, however, by the surgeon is not as a rule purely surgical. It might be said to consist of operative treatment plus a "cure" in which the habits of the patient are corrected, the diet improved, and instruction on hygienic lines generally given. For my part I am satisfied that in many cases the "cure" is more curative than the operative treatment, for equally successful results are obtained by medical treatment. Before the complaints of the patient are ascribed to anatomical changes we should make a thorough examination of all the organs of the body. We should remember that an asthenic state is very common, and that when present it frequently gives rise directly to gastric symptoms as well as ileo-stasis; also that suggestion is frequently responsible for the symptoms of the patient.

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WHAT IS THE PRACTICE OF MEDICINE?

By J. S. Sprague, M.D., Belleville, Ont.

Are the mushroom, fly-by-night, delusive cults (misbranded medical), properly better defined as fakerisms, to be allowed recognition and license in this our Province—in this enlightened age—when the regular profession with its glorious traditions and records and its present triumphs is winning many and imperishable honors and services for our flag? Who are the illegitimates and who are the quacks? Who are they, who, by short-cuts, correspondence schools, etc., want to be enrolled with M.D.'s as licentiates to practise and disgrace the title of *Doctor* and the title of *Phy-*

sician? Illegal practitioners of medicine, pseudo-physicians, unlicensed chiropractors, mechanotherapeutists, magnetopaths, hypnotists, clairvoyants, psychometrists, mental healers, faith healers, persons pretending to practise the religious tenets of real and fictitious churches, naturopaths, vitopaths, psycopaths, hydrotherapeutists, unlicensed and other osteopaths, pandiculatherapeutists, metaphysicians, therapeutic healers, counter prescriptionists, blue-glass healers, etc. So far as legalizing vitapathy, osteopathy, or any system of healing there is only one simple, safe and sure rule to follow, namely, the same high standard of matriculation, study, examination and license. When that is carried out to the letter, one can practise musculopathy, osteopathy, arteriopathy, venopathy, blue-glass pathy, morning-dew therapy, etc. What about the other crazes, fads and delusions? "Someone will discover that stagnation in the veins and the deposit of silt is the true cause of all disease, hence venopaths." Fads will not cease to appear, for faddists and fools are born every minute, and of late twin births are common. Dr. Shepherd's Presidential address before the Canadian Medical Association in 1902 has these words:

"I refer to such things (various quackeries) as Christian science, mental science, spiritualism, vitapathy, osteopathy, and such like, but perhaps they have their uses in this rapid and restless age. They are a vent for people who otherwise would be confined in asylums at a great expense to the public."

Such impositions or frauds as these and those listed are to be soon weighed and measured by a *Commission* named by our Province, and then the dear people will learn the decision if *quackery* is to be tolerated, and if *quackery* is *practice of medicine*, and if it is necessary to close our regular medical colleges, or if it is honorable to name quacks as *doctors and physicians*.

No syncretists however brilliant can mix the incongruous tenets or doctrines of fakers and quacks with the labors of the two doctors described herein by "The Country Doctor" and the eulogy of Lister R. Alwood, Detroit, or any provincial M.D. of our College of Physicians and Surgeons:—

THE COUNTRY DOCTOR

(With apologies to Rudyard Kipling)

As I was agoing 'ome to bed, through a muddy, country lane.
I seen a man in a oilskin cape, atrudging through the rain.
'E 'adn't a match, an's pipe was out, an' I ses to 'im, "'Oo are you?"
An' 'he ses, "I'm a doctor, a country doctor, surgeon and midwife, too."
Now 'e never gets paid for 'arf 'e does, an' he does the work of two;
An' 'e isn't one of the gentlefolks, an' 'e ain't like me nor you.
'E's a sort of blooming chameleon-type; surgeon and midwife, too.

An' I seen 'im again, all over the shop, aplayin' all sorts of rags,
Like settin' a fractured collar bone, with a couple of touch-line flags.
An' the parsons owe 'im money, for their wives give 'im work to do,
Though 'es only the doctor, the country doctor, surgeon and midwife, too.
An' the poor law board, they sits on 'im, an' tries to dock 'is screw,
Though 'e 'as 'is bread and cheese to get, the same as me or you.
They think 'es a 'aughty philautocrat; surgeon an' midwife, too.

An' I seen 'im again with a knife an' things, an' the sweat was on 'is brow,
'E was tryin' to mend the guts of a bloke as 'ad spiked hisself in a row,
'Twas late at night, an' 'e 'adn't no light to see what 'e 'ad to do:
An' 'is pal was a doctor, a country doctor, surgeon an' midwife, too.
'E 'adn't got far with 'is little job, 'e wasn't 'arf way through,
When the bloke sits up an' asks for a drink, the same as it might be you.
Ho! they ain't no special anesthetutes; surgeon an' midwife, too.

But there wasn't a call to do as you done, w'en you 'ad the gout in your toe;
An' you fetched 'im out in the dead of night, an' 'e 'ad six miles to go;
For you've 'ad it before an' you'll 'ave it again, an' you know just what to do.
You don't want the poor old country doctor—dispenser and staff nurse, too.
You pays 'im, what? Yes, tuppence a week, an' you're earnin' thirty-two,
An' 'e 'as to subscribe to your football club, which you're too mean to do,
Because 'es the doctor, the country doctor, surgeon an' midwife, too.

Now I never believes in them specialist thieves, what stammer an' grunt an' blow,
As'll watch yer die, with a winkin' eye, for a 'undred pound or so.
An' when its "checks," and' "Oo's turn next?" which I 'opes it won't be you,
Let's stick to the doctor, the country doctor, surgeon and midwife, too.
An' when you come to the Bar of Gawd, an' 'E says "Oo passed you thru?"
(For 'E 'ates peculiar people, an' the Christian Science crew)
Just mention the doctor, the country doctor, surgeon an' midwife, too.

—*E.G.B.A., in St. Bartholomew's Hospital Journal.*

An illustration of the worth of our profession to the community is most charmingly given us by Mr. Lister R. Alwood, Detroit, Michigan, and the references are to the noble and altruistic labors of his venerable father:—

He wears no man's elegiac gold,
  He bears no crown with titled crest,
No hero-hood's insignia bold
  Shine valiantly upon his breast.
His face is calm as one who sees
  Far out across the waves of Time,
God's life-ships pierce Earth's mysteries,
  And hears its cheerful-sounded chime.

The souls of children round his sleep
Are clustered angel-wise each night,
And those who pain's dim vigil keep
To Heaven commend him in their plight!
No flower that blows when most are gone,
A rare, sweet flame by some gray wall,
Can match his smile that falls upon
The sorrowings of one and all.

Darkness and Doubt, twin shapes of grief,
Keeping their stand beside yon bed,
Mark when his coming brings relief,
How suddenly they've turned and fled.
Tho' lamp be low and window wan
With wraith of moon or falling star,
He brings the bright resurgent dawn
And Love's great sun across the bar!

The traveler reeling home at two;
The orphan, pinched and pallid-faced;
The cripple with his retinue
Of ancient woes, by want debased;
The mother driven to Hope's last stand
Upon her battlefield of life;
Each tortured heart, each faltering hand
That knows the hundred wounds of strife.

These are the clay wherein he moulds
The imperial beauty of his art!
No form that veined marble holds,
No song conceived in poet's heart,
No canvas picturing peak or plain,
Environing deep or sunset height,
Can rival that which brings from pain
Some plenitude of lost delight!

And if no man's elegiac gold
Adorn his unpretentious coat,
And crown with gem and symbol scrolled
Never his nobleness denote;
'Tis by ten thousand deeds of good,
His toilings and his task of love,
The Doctor finds his hero-hood,
And God's sure sanction from above!

This eulogy and "The Country Doctor" herein given, illustrate fully the worth and honor of medical gentlemen—M.D.'s—which the cults are trying to dishonor and drag down to their commercial levels and fakerism.

From the life work of such men—these two doctors—and there are countless examples in our Dominion, our worth as doctors and our nobility as a profession among men have their origin and that exalted citizenship of the world "that makes them loved at home, revered abroad. Wealth and pomp are but the

caprice of things, but men like these do the noblest work of God." Read "The Bonnie Brier Bush" and you will find we have in our midst many men like Dr. MacLure, who honor our profession as it honors them, and the greater its progress and distinction the more the pseudo-cults multiply and want to be *Doctors* and *Physicians*—a disgrace to M.D.'s and to our universities and intelligence. Save us from medical Huns, who want legislation, recognition and license! "Confound their knavish tricks!"—*Medicus.*

DIPHTHERIA AND THE SO-CALLED SCHICK REACTION

(*Therapeutic Gazette.*)

It has been known to active clinicians and laboratory workers for quite a long period of time, that certain persons who receive the micro-organisms of diphtheria speedily develop that malady in varying forms of virulence. On the other hand a by no means small number of persons are able not only to receive but to carry about in the pharynx, in the tonsils, or in the post-nasal spaces, a multitude of these specific micro-organisms without at any time suffering from the slightest degree of discomfort and illness, being at all times unconscious of their infection. These individuals are, however, quite as capable of spreading the disease as are those who have definite clinical manifestations with a false membrane present. These so-called immune persons are doubtless responsible for the development of diphtheria in cases in which all of the ordinary methods of infection seem to have been excluded. Such facts have, at first sight, little bearing upon the problems which confront the active practitioner, who naturally is not called upon to see the diphtheria carrier who has no symptoms and so has no opportunity of attacking the disease in its primary focus. The only way in which he can actively control the spread of diphtheria by such carriers is to insist upon all persons who have been exposed to this disease receiving antitoxin or being locally treated in such a way that the focus of infection is removed. In other words, when an individual has been in charge of or is nursing a case of diphtheria, yet presents no evidences of the disease, the proper thing to do is to investigate the case to find if the nurse's throat is negative as to infection, and if not to see that it is made negative.

Another reason why certain patients develop diphtheria while others equally exposed escape, lies in the fact that one individual contains in his body a considerable amount of antitoxin, whereas

another individual, seemingly equally healthy, has a minimum amount of this valuable protective substance. In other words, it is perfectly possible for two people apparently in perfect health and equal strength to be exposed to diphtheria, one being stricken, the other escaping. The interesting point for the clinician is to determine which one will be stricken and which one will escape. This is of particular interest to him when the somewhat remote danger of anaphylaxis is considered, and still more so when he is called upon to determine as to the wisdom of administering diphtheria antitoxin to a large number of individuals in a family, the members of which have been exposed; or to the still larger number of individuals in an institution where the malady threatens to run riot.

For many months past evidence has constantly been accruing to the effect that it is possible for us to determine which patient needs antitoxin and which patient does not need antitoxin, and this is done by a test closely allied in its nature to the so-called von Pirquet reaction, or test, introduced by that clinician. The test consists in introducing into the skin itself, not subcutaneously, by means of a sharp-pointed fine needle a minute amount of standard diphtheria toxin, not antitoxin, which is diluted, and which contains 0.5 per cent. carbolic acid to preserve it. This standard solution or mixture of diphtheria toxin when about to be used is diluted still further by normal salt solution so that 0.2 C.c. contains 1/50 of the minimum lethal dose for a guinea-pig of 250 grammes. The injection is usually given upon the flexor portion of the arm or forearm. The reaction which it induces varies considerably in different individuals. If the part so treated develops a definite, well-marked hyperemia, or redness, this indicates that the patient possesses very little if any diphtheria antitoxin; a fainter reaction shows that there is more diphtheria antitoxin present; and if there is no reaction the patient can be considered immune for at least a time. Schick, who brought forward this test, claims that about 1/30 of a unit of antitoxin is present in each cubic centimeter of the patient's blood to render this test negative; or, in other words, to indicate that the patient is so immune that after exposure to the disease an injection of antitoxin is not required. Naturally such a test in orphan asylums when properly applied possesses not only a humane but a pecuniary value which is most important.

It is interesting to note that not only do certain individuals vary greatly in their reaction to the Schick test, but that groups of persons forming families vary as groups. Park states that where there are a number of children in a family and the youngest child gives a negative reaction, or in other words, is not suscep-

tible to the disease, a test of the older children usually shows that the same immunity has been conferred upon them; whereas if the older children give positive tests the younger ones are very apt to do likewise.

Two other points are of interest in this connection: One is that a positive reaction when it develops usually comes on in twenty-four hours, and the part is not only red, or hyperemic, but slightly indurated. This condition increases in these characteristics for twenty-four hours more, continues for a week or ten days, and undergoes a gradual involution and leaves behind a brownish discoloration of the skin with some scaliness which may not disappear for twenty-one days from the time of the infection. Occasionally patients present a so-called pseudoreaction, the condition apparently being due to hypersensitiveness of the skin rather than to any susceptibility to diphtheria.

Lastly, this test has proved of interest in that it has thrown some light upon the period of life at which human beings are most susceptible to diphtheria. Various statistics seems to indicate that this period is between the first and sixth year. Some years ago the writer of this editorial published a chart based on 3,360 cases collected from various sources which showed that the greatest incidence of diphtheria was between two and five years, and the Schick test applied to many hundred children indicates also that this is the period when a positive reaction most commonly develops.

The Physician's Visiting List for 1916. Price $1.25. Philadelphia: P. Blakiston's Son & Co.

This is the 65th year of publication. It is arranged for 25 patients a day or week, with pencil and pocket. Other styles are for 50 patients, 75, or 100.

Reviews

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, M.D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Third edition, revised. Octavo of 585 pages, 248 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $3.00 net. Sole Canadian agents, the J. F. Hartz Co., Ltd., Toronto.

This is an excellent book on diseases of the skin for the general practitioner. It is not overburdened with too much upon treatment, but what it does say appears to have been adopted by the author after careful usage over a considerable period of time. There is an especially good article upon "Grain Itch" not particularly noticed in other works of this character. It gives all the newer and up-to-date methods of treatment, such as actinotherapy, X-ray, radium, carbon dioxide snow, etc. Each subject is nicely and carefully arranged, and there is a very appreciable absence of padding. It can be heartily recommended.

What to Eat and Why. By G. Carroll Smith, M.D., Boston, Mass. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. Canadian agents, J. F. Hartz Co., Toronto.

In this new edition there is a new chapter added on Exercise, as well as a new chapter on Rheumatism, which is in accord with present-day teaching on that subject. The book is a very readable one, and presents its various subjects in a very clear and happy style. We are satisfied that medical men can secure no more practical book upon dietetics than this one.

The Clinics of John B. Murphy, M.D., of Mercy Hospital, Chicago. October, 1915. Philadelphia: W. B. Saunders Company. Canadian agents, J. F. Hartz Co., Toronto.

Numerous cases are set forth in this volume. Histories of each case are given, and then follow Dr. Murphy's comments. Details of operations are also recorded; occasionally some post-operative comments, and recapitulations of some cases. Many illustrations depict the conditions.

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Surgery: Walter McKeown, Herbert A. Bruce, W. J. O. Malloch, Wallace A. Scott, George Ewart Wilson.
Obstetrics: Arthur C. Hendrick.
Pathology and Public Health: John A. Amyot, Chas. J. C. O. Hastings, O. R. Mabee, Geo. Nasmyth.
Dermatology: George Elliott.
Physiologic Therapeutics: J. Harvey Todd.
Psychiatry: Ernest Jones, W. C. Herrman.
Ophthalmology: D. N. Maclennan, W. H. Lowry.
Rhinology, Laryngology and Otology: Geoffrey Boyd, Gilbert Royce
Gynecology: F. W. Marlow, W. B Hendry.
Genito-Urinary Surgery: T. B. Richardson, W. Warner Jones.
Anesthetics: Samuel Johnston.

GEORGE ELLIOTT, MANAGING EDITOR

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COMMENT FROM MONTH TO MONTH

The Royal Army Medical Service, it has been repeatedly stated, was prepared for war. The British Navy was in a similar condition. These are the two outstanding features, so far, as regards Britain's preparedness. They have both been very effective.

When Sir John French was in Canada a few years ago he lauded the Canadian Army Medical Corps as equal to that of the home land. Both have abundantly proven their fitness. It is significant that five Canadian hospital units are in the Mediterranean, but yet no Canadian troops there. Equally significant is it that of over eight thousand wounded and sick soldiers passing through one Canadian Base Hospital in France, only about five hundred of them were Canadians.

And for what did they volunteer? Fame! Experience! Gain! No—for none of these. They volunteered for King and country, for humanity, freedom, liberty, civilization. If they could not get on a hospital unit, or with a regiment, medical men have gone over the water at their own expense to enlist in the R.A.M.C. Yes, some even joined the ranks as full privates.

So far there has been a very distinct triumph for preventive medicine. All will hope it may be continued. As regards the

prevention of typhoid fever, the wonderful discovery of Sir Almroth Wright must ever bulk large. In a big measure, the Sanitary Service Companies—a new feature in this war—can lay claim to just credit for a maximum amount of the good health prevailing amongst the British forces on the western battle front. Early in the war it was discerned the sanitary officers of the divisions could not commence to cope with the conditions presented. This fact resulted in the organization of the Sanitary Service Companies for each division. These Companies consist of a commissioned officer, four non-commissioned officers, and twenty-five privates. There are doctors, sanitary engineers, druggists, clerks, and trained and experienced health inspectors. They keep the camps clean and sanitary as a medical officer of health and his corps of medical inspectors keep a city clean and free from disease—chlorinate the drinking water, improvise campaigns against vermin, flies and filth; disinfect, and burn refuse and garbage.

Reports also point to a triumph for surgery, particularly in brain surgery and abdominal surgery. The surgeons have had to meet conditions never seen in civil practice, never reported in medical journals, never even mentioned in text-books. They have met their difficulties with astounding acumen, boldness and skill. Men have been shot through the brain and have in some instances walked into the hospitals, and have been returned to the trenches in three months' time. They have been shived through the nasion, have had rigid paralysis of all four extremities and have fully recovered. Some even are reported as recovering with the bullets still in the cranial cavity.

In the South African war when soldiers were brought in and a positive diagnosis was made of a perforating bullet wound of the small intestine, they all died. In this great war it is highly satisfactory to report that the surgeons are saving the lives of forty-five per cent. of those cases.

Even the cavities of the heart stay not the hand of the dauntless surgeon. One French surgeon has removed a bullet from the right ventricular cavity which had lain there five months. Another English surgeon reports the removal of a bullet from a similar position under local anesthesia. The soldier lived four and one-half days after, but a post-mortem revealed perfect closure of the incision in the chest wall as well as in the cardiac muscle. Too bad that brave soldier died!

When the medical history of the war comes to be written, it will be found that the internists have been equally fortunate and

skilful in their treatment of disease; for has not Mr. Asquith at least twice announced in the House of Commons that over sixty per cent. of the wounded and the sick have been returned to duty in the trenches. Mr. Tennant, the Under-Secretary of State for War, has said that nothing like the way the health of the troops has been preserved ever occurred before in history.

Many people believe the medical profession have often proven themselves worthy in epidemics, scientific investigations, as likewise in various ways in civil practice; but if the "slackers" in belief desire tangible evidence let them cast their eyes and their common sense abroad over European battlefields and discern the great truths for themselves.

Appointments to the Ontario Hospital at Orpington are said to be causing no little anxiety to some medical men as well as to some military medical men. Irrespective of party politics, it is to be hoped the very best men in the province will be selected for positions on the staff of this hospital. Naturally a medical man who has seen service in the Canadian militia, or active service abroad, should be appointed officer commanding; likewise the second in command. The Ontario Government should call for volunteers from the medical profession of the province before it makes any appointments. The chief medical men in the employ of the Government should have a good knowledge of the capable men of the province fit to man this hospital. If they are capable of advising the Government on other medical matters in the province then they should be in a position to advise as to the personnel of the staff, the equipment, and the administration thereof.

Editorial Notes

THERAPEUTICS OF GARLIC

To the Editor of The Medical Press and Circular.

SIR,—The following quotation from Fuller's "Worthies of England" on the medicinal virtues of garlic may interest some of your readers. The worthy doctor has been describing ambergris, and opens his account of garlic thus: "Here is a great and sudden fall, indeed, from the sweetest of gums to the most stinking of roots. Yet is not the distance so great if the worth of garlic be such as some have avouched it. Not to speak of the murmuring Israelites, who prized it before manna itself, some avow it sovereign for man and beasts in most maladies. Indeed, the scent thereof is somewhat valient and offensive: but wise men will be contented to hold their noses, on condition that they may thereby hold or recover their health. Indeed, a large book is written *de usu alii*, which, if it hold proportion with truth, one would wonder any man should be sick and die who hath garlic growing in his garden. Sure I am our palate people are much pleased therewith, as giving a delicious *haut-gout* to most meats they eat, as tasted and smelt in their sauce, though not seen therein. The best garlic is about Stratton in this county (Cornwall)."

Fuller formed his opinion on the virtues of the plant principally from the elaborate account of its medicinal value by Gerarde, who described it as the "husbandman's treacle" which cutteth all tough tumours, openeth all obstructions, is an enemy to all cold poisons and to the bitings of venomous beasts. And he quotes Galen as writing: "Garlic taketh away the roughness of the throat, helpeth an old cough, provoketh urine, breaketh wind, and is a remedy for the dropsey. It killeth and expelleth worms, helpeth a cold stomach, and is a preservative against contagious and pestilent airs." And yet the list given is incomplete, for all the diseases then known are included in it. Woodville (1793) gives a case of a boy, six or seven years old, who for a considerable time suffered from a urinary calculus, which, under treatment by a decoction of garlic, quite recovered. It was remarked that whilst taking the decoction "his urine become extremely turbid, and constantly deposited a copious claylike sediment for several weeks, when it resumed its natural appearance." Sydenham applied garlic poultices to the soles of the feet, as a revulsant, in cases of confluent smallpox.

The great obstacle to the more general use of the plant is, and ever has been, its smell. Thanks to Dr. Sedan, of Marseilles, this has been overcome. He combined trimethanal with the active medicinal principle of the plant, forming a chemical product, Aniodal. Its bactericide properties are vouched for by M. Merieux, director of the Pasteur Institute of Lyons, who in 1902 found it possessed marked bactericide properties in a 1/5600 solution. The salt is odorless, colorless, of a stable composition, and of very slight toxic power. For the past ten years I have had very satisfactory results from its use.

I am Sir, yours very truly,

GEORGE FOY.

Dublin, October 30th, 1915.

GARLIC JUICE IN THE TREATMENT OF SUPPURATING WOUNDS

To the Editor of The Medical Press and Circular.

SIR,—I am pleased to see the letter in your issue of October 20th from the pen of Dr. A. D. Serrell Cooke calling attention to some of the virtues of oleum allii, which cannot be too widely known, as, in my opinion, this drug, from a practical point of view, is the most valuable of all the antiseptics which have heretofore been introduced. It has been my custom for the past fifteen years to endeavor to ascertain the value of this drug in all conditions of diseases caused by the invasions of different bacilli into the human body; and I have found it quite astonishing to note what a large number of diseases are safely and surely cured by its use; and, also, the number of poisons and stings of insects, such as wasps, etc., which are neutralized by it, whilst the rapidity of its action is always remarkable. I have brought many references to it before the profession since 1902, chiefly in connection with tuberculosis. So far as I am aware, with regard to this disease no large experiments have been made in hospitals with it, with the sole exception of the Metropolitan Hospital, New York. At this hospital, under the supervision of Dr. Marshall Wm. McDuffie, fifty-six different modern treatments were put to a trial as to their merits as specifics in tuberculous disease. One thousand and eighty-two cases of various forms of tuberculosis were treated by means of these treatments. Garlic gave the best

results and very considerably lowered the death rate there. For a detailed list of the treatments and particulars, see the paper by Dr. M. W. McDuffie in the tuberculosis number of the *Interstate Medical Journal*, St. Louis, March, 1914, and also the report of the Hospital Committee. As the lung is an organ composed of so numerous and small air spaces and tubes, etc., when it is infected by different varieties of microbes simultaneously, it will for long, I fear, be a subject of much discussion in our profession regarding the influence exerted by each variety. My observations lead me to think that in a given case of pulmonary tuberculosis which is complicated by the presence of other infective germs, if these latter germs disappear under the action of garlic (which destroys many germs), and the patient improves, we must not assume that this patient's improved condition is due solely to his losing these, but also to the destruction of the accessible tubercle bacilli which had existed there also. If some of the tubercle bacilli are inaccessible, the disease will again slowly progress, notwithstanding the initial improvement. It is quite usual to find tubercle bacilli disappear from the sputum under the influence of garlic in suitable cases, and in this I have the corroboration of others. Regarding its specific action upon the tubercle bacillus as it exists in the human body, let us take a simple case, such as very frequently comes before me, of a localized tuberculous lesion—say, for example, a collection of infected tuberculous cervical glands, which has failed to heal under all treatments such as are applied by specialists, and which has gone beyond the limits of surgery and has been discharging for years, and continues to discharge. If it be found, as generally happens, that under local applications of garlic this collection of infected glands heals rapidly and soundly, what may we infer? I think it fair to infer that the garlic has killed the tubercle bacilli, notwithstanding the fact that other germs may have existed there too. Although my book, "The Treatment and Cure of Tuberculosis and Lupus by Oleum Allii," 2nd edition (Bailliere, Tindall and Cox, 1915) does not properly deal with other diseases than tuberculosis, perhaps, I have incidentally mentioned enough of the virtues of oleum allii to cause some of my reviewers to consider that I was introducing a "cure-all," and I cannot object to this, as the more I use this drug the more astonished I become to find the great number of bacilli to which it is fatal within the human body. Only last week, in *The Lancet* (October 16th), I recommended its use as being "the most valuable intestinal antiseptic I know of," and I find in your last issue a few days later (October 20th) some

corroboration by Dr. Cooke, who found it useful in infantile diarrhea. I have long since advised its use in enteric fever. It is also an excellent anthelmintic. Its most gratifying results will, however, be found in diphtheria, and its use in this disease I cannot too strongly advise. Ozena and otorrhea, tuberculous and otherwise, often yield to it like a charm, and the accompanying deafness of the latter is frequently cured. In my book will be found mention of other diseases in which I have found it curative. What I looked upon as one of the first triumphs which this drug brought before me in my solitary researches was its effect upon sores and suppurating and gangrenous tissues in times long before our soldiers suffered so severely from suppurating wounds. Going back to these days in the early part of my book (page 15), I incidentally mention the fact in the following words: "I have shown what directed my attention first to it, and I was impressed by its deodorizing effects on the expectoration from the time I commenced to use it; also on the corresponding effect on discharges from ulcers and sinuses. The other physical property which seemed to me most striking was the penetrating power of the garlic preparations. I know of no substance which will penetrate the tissues of the body so rapidly, however administered, whether applied locally to ulcerated integument, or internally through the gastro-intestinal mucous membrance by swallowing, the characteristic effects never failed to manifest themselves rapidly." I would, indeed, be much surprised if its antiseptic value is found to be low, as I believe that it destroys more infective bacilli within the human body than all the other known antiseptics taken collectively, and whilst doing so its administration is perfectly safe to our patients if it is properly applied.

I am, Sir, yours truly,

Wm. C. Minchin, M.D.

Herstmonceux, Sussex, October 29th, 1915.

DOMINION MEDICAL MONTHLY

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News Items

The University of Toronto Base Hospital at last reports was in Salonika.

Dr. W. W. Milburn, Macloed, has been appointed physician to the Blood Indians.

Dr. Roy Thomas, assistant to Dr. N. A. Powell, Toronto, has enlisted for overseas service.

Major Handford McKee, Montreal, has been invalided to England from the Dardanelles.

Dr. Ramsay Rankin, Stratford, Ont., is medical officer to the Perth County Ontario Battalion.

Dr. B. J. McConnell, Winnipeg, Man., has been appointed coroner for the City of Winnipeg.

Dr. Lorne Graham, Wallacetown, Ontario, lost his life on a transport torpedoed in the Aegean Sea.

Dr. Daniel Phelan, surgeon to the Penitentiary at Kingston, Ont., has retired after nineteen years' service.

Dr. Harold Tait, St. John's, Newfoundland, is on the staff of a base hospital of three thousand beds in Malta.

Congratulations are due to Dr. R. G. Brett, Banff, Alberta, on being selected Lieutenant-Governor of that Province.

Dr. S. J. Schofield, Kingston, has been appointed Professor of Geology and Mineralogy in the University of British Columbia.

Captain Howard Hepburn, formerly Superintendent of the Montreal General Hospital, is on the staff of one of the British field hospitals.

Lieutenant J. W. Richardson, M.D., Calgary, operating specialist in the Imperial Army Medical Corps, is home on sick leave after a year's service.

The inmates of the Ontario public institutions have contributed twenty-five to thirty carloads of supplies for the Ontario Military Hospital in Orpington, Kent County, England.

Dr. Oliver R. Mabee, Toronto, has been appointed Acting Professor of Pathology in the University of Toronto, Professor John J. Mackenzie having been granted further leave of absence abroad.

Dr. John Cameron of Middlesex Hospital, London, England, has been appointed to the Chair of Anatomy of Dalhousie University, Halifax, N.S., as successor to the late Dr. A. W. H. Lindsay.

Dr. Charles Gordon Heyd, a graduate of the University of Toronto, has been appointed Professor of Surgical Anatomy in the New York Post-Graduate Medical School in succession to Dr. McGrath.

Dr. D. E. Staunton Wishart, R.A.M.C., is convalescing from an attack of pyrexia in the Bulkley Convalescent Home, Alexandria. He has been mainly occupied on a "drifter" in conveying wounded and sick from the peninsula to hospital ships.

In the death of Sir Charles Tupper, Bart., and the Hon. Dr. Montague, Canada lost two medical men who became national figures. Both had great powers of speech, and were amongst the foremost debaters and orators of the House of Commons decades ago. At the time of Confederation Sir Charles was prominent in medical life, and was the first President of the Canadian Medical Association, founded in 1867. The Hon. Dr. Montague was a practising physician in Dunnville, Ont., when he broke into public life, and the strenuous political campaigns through which he passed in the County of Haldimand brought him at once into prominence. Both were forceful and able men.

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Publisher's Department

Whooping-Cough a Serious Disease.—In an address before the New York Academy of Medicine, and reported in the *Archives of Pediatries*, issue of August, 1914, John Lovett Morse, A.M., M.D., Professor of Pediatries in the Harvard Medical School, made this significant statement: "The relative mortality from whooping-cough, scarlet fever and diphtheria is essentially the same throughout the country, whooping-cough being almost everywhere more fatal than scarlet fever and less fatal than diphtheria. . . . Instead of being a trifling affair, as it is usually considered to be by the laity, whooping-cough is a most serious and fatal disease. 'Any disease which kills 10,000 children per annum is,' as Rucker says, 'a serious one.' If bubonic plague were to kill that many children in the United States in one year the whole world would quarantine against our country. A child dead of whooping-cough is just as dead as a child dead of plague."

In the same issue of the journal above referred to, the editor, an undoubted authority, says that "Whooping-cough causes more deaths in children under one year than any other infectious disease."

In view of these startling facts, is it not just possible that the profession at large, like the average layman, has been too prone to look upon whooping-cough as an inevitable concomitant of childhood, and to underestimate its seriousness?

The Bordet-Gengou bacillus is recognized as the specific cause of whooping-cough, and the most rational method of treating the disease is by means of vaccine prepared from cultures of this bacillus. It is pertinent in this connection to refer to two such vaccines which are manufactured and marketed by Parke, Davis and Co. One bears the name of Pertussis Vaccine; the other is designated as Pertussis Vaccine, Combined. The first-mentioned vaccine is indicated in cases diagnosed as pertussis, in suspected cases when a definite diagnosis is lacking, and as a prophylactic. The second is indicated in all cases of pertussis, but especially those which have persisted for some time, such infections being usually of the mixed type. The vaccines are administered hypodermically, and are supplied in bulbs, in rubber-capped vials, and in glass syringes. The various packages are fully described in an announcement which appears elsewhere in this journal under the caption, "The Vaccine Treatment of Whooping-Cough." The advantages of the vaccine treatment are succinctly stated in the advertisement, which our readers are advised to consult.

Useful in Malarial Fever.—While the specific for malaria is universally known to be quinine, it is a fact gleaned from clinical experience that its value is largely increased by using Phenalgin coincidentally. Observation in malarial districts has shown that Phenalgin not only materially enhances the action of quinine, but often prevents certain of its disagreeable effects like tinnitus, headache, etc. In the routine treatment, therefore, of malarial fever the employment of Phenalgin in conjunction with quinine, can be relied upon to accomplish more prompt and satisfactory results.